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Journal OF THE AMERICAN DIETETIC ASSOCIATION

VOL. 27, NO. 11 NOVEMBER 1951

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Nine Years of Military Service

Report from Maryland

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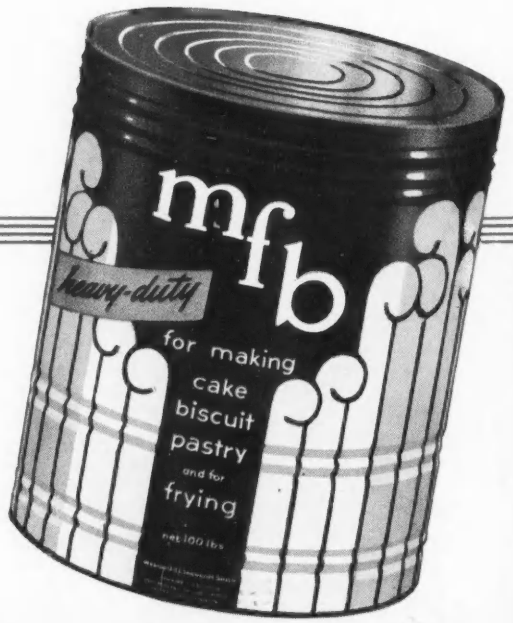

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Cooperative Planning of Dietary Services for 50-, 100-, and 200-Bed General Hospitals[1]

THE departments in a hospital comprise a team whose goal is better patient care. To achieve this objective, each department must first determine its responsibilities and functions. As a part of this team, the dietary department, aside from its clinical responsibilities to the patients, has the following administrative responsibilities:

(a) To serve patients appetizing and nourishing meals.

(b) To serve personnel caring for the patients appetizing and nourishing meals.

(c) To provide this food as economically and efficiently as possible.

Successful discharge of these responsibilities depends on careful planning of the layout and equipment and on adequate and well trained personnel. Important factors to consider in planning and equipping a kitchen in addition to proper size, type, quality, and arrangement of equipment are sanitation, equipment maintenance, cost of operation, and kind and number of staff that will be needed. The comfort and safety of all workers is also a major consideration. Good planning will insure that the flow of work within and between each unit proceeds without loss of time.

These goals in kitchen planning can rarely be attained without the cooperative efforts of many professional groups: the architect, the dietitian, the administrator; the mechanical, sanitary, construction, and electrical engineer. The floor plans presented here are the result of the cooperative planning of representatives of these professions.[2]

The first task was to determine the location of the main kitchen. The kitchen should be located at or above grade level so as to eliminate any complications with sewage and to assure adequate outside light and ventilation. It should be convenient to the elevators leading to the patient area and convenient to the outside loading area.

The kitchens shown here (Fig. 1–3) are at the ends of wings of the hospitals. Such a location eliminates much undesirable traffic in the kitchen and will allow some deliveries to be made directly to the kitchen storage area. Adjoining this area at the receiving entrance is a dock platform for unloading purposes.

The dining room or cafeteria is located across the hall from the kitchen in the 50-bed plan; it is adjacent to the kitchen in the 100- and 200-bed plans. This location permits considerable utilization of outside light from the windows on the sides.

After the area had been designated for the kitchen, there were several questions that needed to be answered and certain basic assumptions to be made before the plans could be developed further. We do not wish to indicate that the food service practices which influenced our decisions are the only good methods; rather, they represent what we feel is a practical solution and are representative of the practices that may be followed in general hospitals of

[1] Prepared by: Wilbur R. Taylor, Hospital Architect; Miriam Kaufman, Dietary Equipment Consultant; Edith A. Jones, Dietitian Consultant; under the general direction of John W. Cronin, M.D., Chief, Division of Hospital Facilities, Public Health Service, Federal Security Agency, Washington, D. C.

[2] Grateful acknowledgment is made of the critical assistance received on these plans from the following:

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Maynard Rauch, Mechanical Engineer, Technical Services Branch

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Malcolm Hope, Sanitary Engineer and Chief, Program Operations Branch, Division of Medical and Hospital Resources, Public Health Service

Members of the Dietetic Branch, Division of Hospitals

TABLE 1

Estimated maximum number of persons to be fed

	50-BED HOSPITAL	100-BED HOSPITAL	200-BED HOSPITAL
Patients	50	100	200
Personnel*	75	150	300
Total	125	250	500

* Based on ratio of 1.5 personnel per patient.

TABLE 2

*Estimated average maximum meals to be served**

	50-BED HOSPITAL		100-BED HOSPITAL		200-BED HOSPITAL†	
	Patients	Personnel	Patients	Personnel	Patients	Personnel
Breakfast	50	20	100	70	200	140
Noon meal	50	55	100	100	200	200
Evening meal	50	20	100	75	200	150
Night meal						

* Personnel determined from *Staffing the General Hospital—25 to 100 Beds* (10).

† Estimated figures.

200 beds or less. The following questions were explored before any drawing was undertaken.

Basic Questions

I. WHO IS TO BE FED AND WHAT WILL BE THE AVERAGE NUMBER OF MEALS SERVED? (Answers are given in Tables 1 and 2).

II. HOW, WHERE, AND WHEN ARE PATIENTS AND PERSONNEL TO BE SERVED?

A. *Patient Service.* The question of tray service deserves special consideration. In these plans the distance between kitchen and patient is comparatively short. Therefore, in order to reduce the need for supervisory personnel, a plan somewhere midway between centralized and decentralized service was selected. This we have termed "centralized bulk food service."

The trays are set up centrally in the kitchen with a tray cover, salt and pepper, napkin, silverware, cup and saucer, and glass. Plates are placed in the warming section of the food conveyor. The cold dishes, such as salads and desserts, may be portioned out in the kitchen and kept in the refrigerators until meal time. These may be transported in the unheated section of the food conveyor or placed on the trays immediately before leaving the kitchen. If the latter practice is followed, an enclosed tray truck should be used.

The bulk food is transported to the different floors at meal time in electrically heated food conveyors; beverages are carried in vacuum or insulated containers. Food conveyors are plugged into an electrical outlet on the corridor wall at a convenient location within the patient area but out of a direct line of traffic. The tray trucks with trays are moved from the main kitchen to the patient area at the same time. As each tray is completed, it is carried immediately to the patient.

The trays are collected after use and returned on the tray truck to the dishwashing room with the dishes on them.

This type of service offers the economy of centralized dishwashing, thus eliminating the duplication of equipment and services in the floor pantries. It also allows the dietitian to keep a close check on her food service and the popularity of the foods served and permits better supervision of all dietary personnel.

B. *Personnel Service.* In the 100- and 200-bed hospitals where large numbers of personnel are served, cafeteria service is planned. All food for the cafeteria will be prepared and transported from the main kitchen.

In the 50-bed hospital, the number of personnel to be served at any one time during the meal period is small. For this reason they are to be served in a dining room with waitress service. The plates will be served directly from the cook's table in the kitchen.

C. *Meal Service Period.* The size, capacity, and type of equipment must be determined not by the total number of persons served, but rather by the number served at one time. Thus the time of meal service has a direct bearing on the planning. The meal periods for patients and personnel will usually overlap at noon and often at breakfast. The maximum amount of food to be prepared for any one time will be a quantity to serve all patients and approximately one-third of the personnel. In all three plans, we have determined that the patient's meal hour will extend over a 30- to 45-min. period and will probably overlap 15 to 20 min. of the personnel meal service at noon. Personnel meal hours would extend over a period of 1 to 1½ hr. This would mean that food will have to be replenished in the cafeteria at least once during the serving period.

III. WHAT TYPE OF MENUS WILL BE SERVED? It was assumed that personnel in the 50-bed hospital would be served the same menu as the patients on the normal diet. Those served in the cafeteria of the 100- and 200-bed hos-

pitals would have a choice of some items. Menus for the normal and special diets which follow the principles of planning special diets as a modification of the basic hospital diet served as a guide in the planning.[3]

IV. OTHER BASIC ASSUMPTIONS.

A. Staples will be stored in a central storeroom located elsewhere in the hospital. Supplies will be delivered to the kitchen once a day.

B. Some baked products will be purchased, particularly all of the loaf bread.

C. Ice cream will be purchased.

D. Frequent delivery of perishable items will be available from the local community.

E. Some frozen foods will be used, including meats, fruits, vegetables, fish, and poultry.

F. It is assumed that some of the meat in the 200-bed hospital will be purchased in large cuts and that some fabricated cuts will be purchased in the 50- and 100-bed hospitals.

G. Ice will be made in machines in the hospital.

H. There will be a central dishwashing room for patient and personnel dishes. Dishes from isolated patients will be sterilized in the self-contained isolation nursing unit. Where separate contagious wards or tuberculous wards are maintained, this particular floor will have its own dishwashing unit.

I. In the 50-bed hospital, the total staff on duty each day in the dietary department will be approximately 7 persons; in the 100-bed hospital, approximately 12 persons (10). (The staff of the 200-bed hospital may be more than twice the number indicated for the 100-bed hospital. The planning for equipment and layout affects the number of employees that will be needed. For example, in the small hospital there is a need to save steps for the cook so as to allow her to perform and watch several operations at one time.)

J. In the three plans presented, no space has been allotted for teaching of student nurses within the kitchen area.

K. The formula room has not been included as part of the main kitchen.

L. Each floor pantry will be equipped with a sink, a heating unit where small between-meal nourishments can be prepared, and a refrigerator where fruit juices and other foods for nourishments can be stored. The floor pantry will not be used for patient tray service. All dishes used in the floor pantry will be returned to the central dishwashing unit for cleaning and bactericidal treatment.

[3] Master Menu published monthly in *Hospitals*.

General Factors

Having determined this basic information, we still had to bear in mind some general factors. The main kitchen must function as a complete unit. Each part is so interrelated that it was necessary to plan the flow of work so that food will move in one direction to patients and personnel without backtracking. The basic sequence of receiving to storage to prepreparation to preparation to serving to consumption applies in all kitchens regardless of size. Also, for efficient operation, areas for the disposal of waste, potwashing, and office space must be provided. Toilet and locker facilities should be located near by.

One might expect that the size of kitchens would increase in direct ratio to the increase of patient beds. This is not true. The same basic operations must be performed in all hospital kitchens. The minimum amount of space for these operations is considerable and will not double with twice the patient beds. For example, the square footage given to the kitchen in the 50-bed hospital plan covers a net area of 1540 sq. ft. The 100-bed plan has a net area of approximately 2435 sq. ft., and the 200-bed plan has an approximate net area of 3550 sq. ft.

To understand the planning for each of the units within the three kitchens, one must know exactly the operations that are to be performed in each area.

Receiving Area

In the receiving area, enough space must be provided to handle deliveries of crates of eggs, oranges, milk, lettuce, and so on, and be so located that foods can be moved to the storage area in the kitchen on carts by the most direct route without obstruction.

The receiving area must be large enough to accommodate a platform scale for checking deliveries of large items and a hanging scale for the smaller items. Where space permits, a counter is provided to facilitate the checking of deliveries. In the 100- and 200-bed plans, a platform truck is provided for transporting the large deliveries. In the 50-bed hospital, it was felt that the deliveries would be of such nature that a small utility truck would be adequate.

Storage

DAY STORAGE

Provision of a day storage area is based on the assumption that a central storeroom for the hospital will be maintained and staples will be issued by a storekeeper for current use. The day storage area will take care of small food items and partial cases of foods not requiring refrigeration.

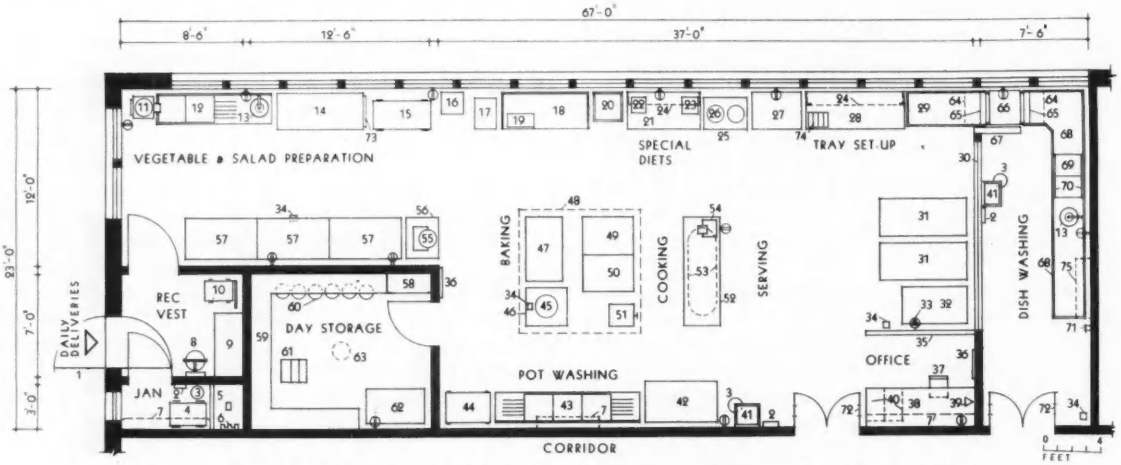
The most convenient place for the day storage is near the receiving area and adjacent to the preprepa-

ration area of the kitchen. This location is important in order that food supplies may be handled and controlled in the most efficient manner. It may not be the most accessible for delivery of supplies from the central storeroom, but there will probably not be more than one delivery from the central storeroom to the kitchen each day—usually in the early morning before the food preparation is underway.

Verminproof storage cans on casters are placed in the day storage for dry beans, sugar, flour, and other dry supplies purchased in large quantities. A locked cabinet is provided for storage of some small items. Adjustable open shelving is used so that all storage space can be used to the best advantage and the need to store food on the floor is eliminated. To facilitate handling and selection of food, a step ladder is also provided.

It is suggested that bread can be stored in this area also. If so, then additional precautions must be taken to prevent vermin attack. Bread can also be stored in a bin under the tray set-up counter or under the special diet counter. The same principles of ratproofing would apply in these areas also.

In the 200-bed hospital, a separate cabinet is provided for bread storage. This location, adjacent to the baking area, is convenient to receiving also.



KITCHEN FOR A 50-BED GENERAL HOSPITAL USING CENTRALIZED BULK FOOD SERVICE

NOTE IF FOOD WASTE GRINDERS ARE NOT USED GARBAGE REFRIGERATOR AND CAN WASHING ROOM SHOULD BE PROVIDED

LEGEND

1. Screen door
2. Paper towel cabinet
3. Waste paper receptacle
4. Mop truck
5. Curb and receptor or sink
6. Mop rack
7. Shelf over
8. Hanging scale with pan, dial face, 60 lb. by 1 oz.
9. Counter, for checking deliveries
10. Platform scale
11. Peeler, 15-lb. capacity, pedestal type with peel trap
12. Sink, 2-compartment, each compartment 24 by 24 by 14 in., 1 drainboard
13. Food waste grinder, institutional size, with prerinse spray
14. Preparation table, 30 by 72 in., with 2 drawers and undershelf
15. Utility truck
16. Water cooler
17. Cooling rack, 24 by 18 by 72 in., on casters
18. Baker's table, 30 by 72 in. with 2 drawers and overshelf
19. Baker's scale
20. Sink, single compartment, 24 by 24 by 14 in.
21. Counter, 30 by 60 in., cabinets below
22. Dietetic scale, gram
23. Toaster, electric, 4-slice, heavy duty
24. Wall cabinets
25. Coffee urn stand
26. Coffee urn (battery), one 5-gal. coffee urn, one 10-gal. boiler
27. Ice cream cabinet, 15-gal. capacity. (Provide running water dip well if bulk ice cream is used.)
28. Counter, 30 by 84 in., open shelves below
29. Clean dish table with up-turned edge
30. Glass partition above wainscot
31. Tray truck, open, approximately 25-tray capacity (tray size approximately 14 by 18 in.)
32. Food conveyer, 50-patient capacity
33. Electric outlet
34. Floor drain
35. Partition 3 ft. high
36. Bulletin board, 26 by 24 in.
37. Straight chair
38. Built-in desk
39. Telephone outlet
40. File cabinet, 2-drawer
41. Lavatory (hand washing)
42. Refrigerator (salad and cook's), 40-cu.-ft. capacity
43. Sink, 3-compartment, each compartment 24 by 24 by 14 in., one compartment with dial thermometer, 2 drainboards
44. Pot cabinet, 24 by 36 by 72 in., adjustable open shelving, on casters
45. Kettle, steam-jacketed, 10-gal. capacity
46. Floor depression
47. Roasting oven, 2-section, each section with additional removable shelf for baking (deck 33 by 22 in.)
48. Hood
49. Range, oven below
50. Range, one section griddle, and one section hot top, broiler below
51. Steamer, 1-bu. capacity
52. Cook's table, 30 by 90 in., dish warming section below
53. Pot rack, over cook's table
54. Meat slicer, motor driven
55. Mixer, bench type, 20-qt. capacity with 12-qt. bowl, meat and food chopper attachments
56. Cabinet stand for mixer
57. Refrigerator, 40-cu.-ft. capacity
58. Locked cabinet
59. Shelves, 16 in. deep, first shelf 36 in. from floor
60. Storage can, mounted on casters
61. Step ladder, pantry type
62. Frozen food cabinet, vertical type, 18-cu.-ft. capacity
63. Ventilator at ceiling
64. Hood
65. Dish table drain
66. Dishwashing machine, single-tank, floor model, vertical sliding door, approximate capacity 1250 pieces per hour, automatically timed
67. Rack return
68. Soiled dish table with 3-in. up-turned edge
69. Soak sink, 2-compartment
70. Slide rails (for conveying dish racks)
71. Hot and cold water outlet
72. Vision panel
73. Kitchen tool rack
74. Silver box, 4-compartment
75. Shelf over for soiled glasses

REFRIGERATION STORAGE

In the 100- and 200-bed plans, three walk-in refrigerators are located so that perishable foods can be delivered and stored conveniently and are also accessible to all preparation areas. These have been planned for the storage of meat, milk, and vegetables. The meat refrigerator is provided with meat hooks and rails and adjustable shelving.

In the 50-bed plan, three 40-cu.-ft. reach-in refrigerators are indicated for storage of meat, milk, and vegetables. These, too, are fitted with adjustable shelving and are adequate for the small hospital located in areas where deliveries are frequent. However, in cases where hospitals are in isolated areas, walk-in refrigerators may be essential to provide storage space for infrequent deliveries.

Additional reach-in refrigerators are provided in units of the kitchen where they are especially needed for the cook's use, for salads, for special diet foods, and for desserts.

FROZEN FOOD STORAGE

Since frozen foods are widely used in institutional food service, we have tried to anticipate a sufficient amount of storage space for them. In the 200-bed plan, a frozen food locker with a capacity of approximately 80 cu. ft. is provided at the back of the vegetable walk-in refrigerator. This is placed so that there will be a direct flow of frozen food to the vegetable and salad prepreparation unit.

The quantity of frozen food that will be used by the smaller hospitals will be smaller in proportion than that of the 200-bed hospital. Frozen food storage cabinets are placed in the day storage areas of the 100- and 50-bed hospital plans, their capacities being 30 and 18 cu. ft. respectively.

Storage for ice cream is provided in the serving area.

Janitor's Closet

This unit is near the kitchen area so that the necessary cleaning supplies are convenient and easily accessible. In these plans the janitor's closet is located so there would be outside ventilation and natural light available. Each janitor's closet is equipped with a curb and receptor or sink, a mop truck, and a mop rack. Floor drains have been planned throughout the kitchen area to facilitate the flushing and mopping of the kitchen floor.

Prepreparation

VEGETABLES AND SALADS

The preliminary preparation of vegetables and fruits involves sorting, washing, peeling, and cutting before the food is sent to the cook's unit or prepared as salad or dessert. In these plans, vegetable and salad preparation are combined, and work table space is provided for completing salad preparation here. The salads are to be stored in a refrigerator adjacent to this unit. In the 50-bed plan, the refrigerator's location makes it convenient for the waitress to serve salads and desserts and other refrigerated foods to the dining room across the hall.

Provision is made in this unit for adequate floor space for holding vegetables and fruits in sacks and crates. Aisles 5 to 7 ft. wide are allowed for greater efficiency, whereas 3- to 4-ft. aisles suffice in other units.

The quantity of vegetables and fruits that will be prepared in this area is large in the 200-bed hospital. A motor-driven food cutter is provided to assist with the prepreparation. Only one potato peeler (30-lb. capacity) is indicated since there will probably be one employee assigned full time to this area. The potato peeler is placed so that it empties directly into the two-compartment sink. All sinks shown in these plans, with the exception of the one in the dishwashing area, are 24 by 24 by 14 in. and have 12-in. splashbacks.

Food waste grinders are installed in the drainboards of the sinks in these areas. By the use of food waste grinders, the problems of vermin control are simplified somewhat. A food waste grinder also eliminates the odors and seepage that so often occur when refuse is collected in cans. An effort has been made to place it in the area where food waste occurs, so as to avoid the transportation of refuse.

With the use of the food waste grinder, galvanized refuse cans on casters must be provided for the collection of paper, bottles, and cans. The trash collection area (not shown) should be conveniently located on or adjacent to the loading platform.

If food waste grinders are not used, some provision must be made for food waste storage, preferably a refrigerated room. An adjacent room for can washing, equipped with warm water and steam outlets, is necessary also.

The smaller hospitals, the 50- and the 100-bed, require the same equipment as the 200-bed hospital for vegetable and salad preparation. In the 50-bed plan, a peeler of 15-lb. capacity should be adequate.

MEAT

In the 200-bed hospital, the meat prepreparation unit is equipped with a table, meat block, sink, and meat chopper. A two-compartment sink is provided so that cutting equipment can be adequately washed. A food waste grinder is not used. However, if the hospital has an unusually large amount of meat, fish, and poultry to prepare, then consideration should be given to the installation of one.

In the smaller hospital, the cook or cook's helper will perform the meat cutting jobs. In the 100-bed hospital, the work load is sufficient to warrant a meat block and a table for meat preparation. In the 50-bed hospital, no special equipment is planned for meat cutting.

KITCHEN FOR A 100-BED GENERAL HOSPITAL USING CENTRALIZED BULK FOOD SERVICE

NOTE IF FOOD WASTE GRINDERS ARE NOT USED GARBAGE REFRIGERATOR AND CAN WASHING ROOM SHOULD BE PROVIDED

LEGEND

1. Screen door
2. Platform scale, 1000-lb. capacity, drop lever
3. Platform truck
4. Hanging scale with pan, dial face, 60 lb. by 1 oz.
5. Paper towel cabinet
6. Waste paper receptacle
7. Lavatory (hand washing)
8. Water cooler
9. Peeler, 30-lb. capacity, pedestal type with peel trap
10. Sink, 2-compartment, each compartment 24 by 24 by 14 in., 1 drainboard
11. Food waste grinder, institutional size, with pre-rinse spray
12. Refrigerator (salad) 30-cu.-ft. capacity
13. Counter, 30 by 84 in., cabinets below
14. Dietetic scale, gram
15. Wall cabinets
16. Counter, 30 by 96 in., open shelves below
17. Silver box, 4-compartment
18. Clean dish table with up-turned edge
19. Coffee urn stand
20. Coffee urn (battery), one 5-gal. coffee urn, one 10-gal. boiler
21. Ice cream cabinet, 10-gal. capacity. (Provide running water dip well if bulk ice cream is used.)
22. Tray truck, open, approximately 25-tray capacity (tray size approximately 14 by 18 in.)
23. Food conveyor, 50-patient capacity
24. Electric outlet, ceiling drop, 2 receptables
25. Floor drain
26. Table with up-turned edge
27. Sink, 3-compartment, each compartment 24 by 24 by 14 in., one compartment with dial thermometer, 2 drainboards
28. Shelf over
29. Pot cabinet, 24 by 60 by 72 in., adjustable open shelving, on casters
30. Refrigerator (cook's), 50-cu.-ft. capacity
31. Meat block
32. Table, 24 by 60 in.
33. Kitchen tool rack
34. Locked cabinet
35. Shelves, 16 in. deep, first shelf 36 in. from floor
36. Storage can, mounted on casters
37. Frozen food cabinet, vertical type, 30-cu.-ft. capacity
38. Meat hooks and rail
39. Refrigerator shelving, 18 in. deep, first shelf 36 in. from floor
40. Telephone outlet
41. Mop truck
42. Curb and receptor or sink
43. Mop rack
44. Preparation table, 30 by 60 in. with drawer and undershelf
45. Utility truck
46. Sink, single-compartment, 24 by 24 by 14 in.
47. Cook's table, 30 by 120 in., with 2 drawers and undershelf
48. Pot rack over cook's table
49. Meat slicer, motor driven
50. Range, oven below
51. Range, broiler below
52. Spreader plate
53. Deep fat fryer, approximately 25-lb. capacity
54. Steamer, 2-compartment, 4-bu. capacity
55. Floor depression
56. Hood
57. Kettle, steam-jacketed, 30-gal. capacity
58. Swinging water spout over steam kettle (hot and cold water)
59. Kettle, steam-jacketed, trunnion, 10-gal. capacity
60. Roasting oven, 2 sections, each with additional removable shelf for baking (deck 42 by 32 in.)
61. Baker's table, 30 by 72 in. with 2 drawers and overshelf
62. Cooling rack, 24 by 18 by 72 in., on casters
63. Mixer, 60-qt. capacity, with 30-qt. bowl, meat and food chopper attachments
64. Electric outlet at floor
65. Hood
66. Dish table drain
67. Dishwashing machine, single-tank, floor model, vertical sliding door, approximate capacity 3000 pieces per hour, automatic
68. Rack return
69. Soiled dish table with 3-in. up-turned edge
70. Soak sink, 2-compartment
71. Slide rails (for conveying dish racks)
72. Hot and cold water outlet
73. Vision panel
74. Locker
75. File cabinet
76. Bookcase
77. Table, 30 by 36 in.
78. Straight chair
79. Desk
80. Swivel chair with arms
81. Bulletin board, 26 by 24 in.
82. High windows
83. Baker's scale
84. Step ladder, pantry type
85. Glass washing brush
86. Shelf over for soiled glasses

Preparation

BAKING

In the 200-bed plan, there is a central baking unit equipped with a 20-qt. mixer, a table, sink, proof box, cooling rack, pot cabinet with open shelving, and a counter top with a recessed, two-element heating unit. It was decided that the amount of baking in the 200-bed hospital would not warrant the need for a separate oven. Consequently, the three-section oven is located with the other equipment convenient to the baking unit. The roasting section of the oven is equipped with an additional shelf so that, when needed, it can serve as a baking oven.

It is generally agreed that in the institutions of 50- and 100-bed capacity, the volume of baking and the limited staff do not justify the provision of a separate baking unit. In these, the assistant cook will probably do all the baking. The two-section roasting ovens in these plans are, therefore, located with the other cooking equipment. These ovens are equipped with additional shelves so that each section can be used for baking. A cooling rack is provided to add working space for the cook. The mixer and other equipment which might be used in baking are centrally located.

COOKING

In the 200-bed plan, the cooking unit is located so that the vegetables and other foods can move directly from their prepreparation unit to be cooked and directly from preparation to the cook's table which is the center of the serving area. The three-compartment steamer is placed close to the vegetable prepreparation unit. Three steam-jacketed kettles of different sizes are provided. Two small deep fat fryers were selected in preference to one large one, and a double-deck, self-contained broiler is placed directly behind the cook's table. A mixer for the main kitchen's use is in front of the cooking unit. This is a convenient location for mashed potatoes to be prepared and served directly. Three ranges with oven space below complete this cooking unit.

The equipment in the cooking unit of the 100-bed plan is located in the same general area as in the 200-bed plan. A two-section roasting oven is provided with each section equipped with an additional shelf so that it can be converted to use for baking. In the 100-bed plan, there is limited need for steam-jacketed kettles. This kitchen is equipped with one 30-gal. steam-jacketed kettle and one 10-gal. trunnion kettle. These sizes were selected to provide the maximum utility of the kettles. The steamer has two compartments with a capacity of 4 bu. One deep fat fryer with a capacity of 25 lb. fat is provided, and for broiling purposes one range is equipped with a broiler below. A 60-qt. mixer equipped with a 30-qt. bowl and meat and food chopper attachments is placed in the cooking area. If the attachments for the mixer are too high to be convenient for the worker, then a separate meat chopper and food cutter would need to be considered. For additional oven space, one range with oven space below is indicated. This space will be used for preparing holiday menus when more oven space is needed.

Because of the smaller quantity of food to be prepared and less variety within the menus, the equipment needed in the cooking area of the 50-bed plan is quite simple. In this plan we have placed a two-section roasting oven, smaller than that in the 100- and 200-bed plans, each section equipped with an additional shelf for baking. Other pieces of equipment in the 50-bed plan are a junior-size steamer with a capacity of 1 bu., one steam-jacketed kettle with 10-gal. capacity, and a bench-type mixer with a capacity of 20 qt. The mixer is equipped with a 12-qt. bowl and meat and food chopper attachments. One range with an oven below and one range with a fry-top-section and with a broiler below are provided.

In all of the kitchens, the floor area below the kettles is depressed slightly and is pitched to a floor drain. To keep the kitchen comfortable and free from unpleasant odors, an exhaust system in a properly constructed hood is placed over the cooking area.

SPECIAL DIETS

A special diet kitchen is not provided in any of these plans. All special foods are to be prepared in units where the regular food is prepared and served to the patients in the same manner as the regular diet. The number of diets other than the normal, soft, and liquid will not exceed 15 per cent of all meals served to patients. Most of the food for special diets that cannot be prepared in other units will be liquid nourishments to be served between meals and a few special weighed foods. A counter is provided for preparing these liquid nourishments and for the weighing of foods on dietetic gram scales. The liquid nourishments are transported on the food conveyors to the floor pantry at each meal time.

Serving and Tray Set-Up

The serving area consists of a tray set-up counter, the cook's table, ice cream storage, and coffee preparation unit, the focal point being the cook's table. Ample floor space is allowed for food conveyors to be filled in this area.

There is space for setting up trays on a counter adjoining the clean dish table. Trays can be set up here with silver, some china, glassware, and accessory items. Cabinet space is provided for storage of these items when not in use.

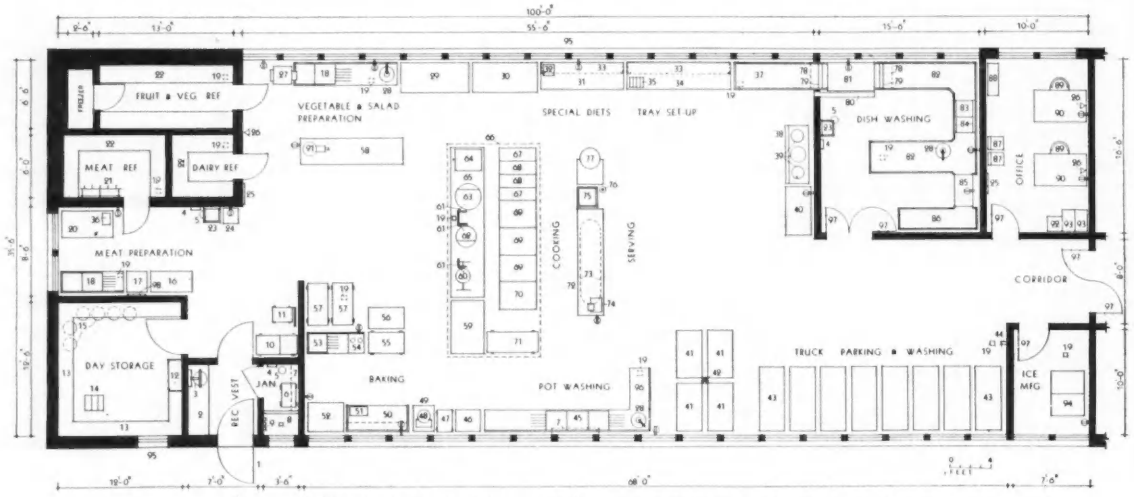
Common practice is to purchase ice cream packaged in individual blocks rather than bulk form. However, if the hospital uses bulk ice cream, a

running water dip well should be installed at the ice cream storage cabinet.

Adequate space for ice cream storage and preparation of coffee for patients only is provided in the kitchens of the 100- and 200-bed hospitals. Ice cream storage and coffee preparation facilities for personnel are provided in the cafeteria.

In the 50-bed hospital, space in the main kitchen for ice cream storage and coffee preparation for both patients and personnel is needed. Some may prefer the five- to six-element vacuum coffee maker. This type of coffee maker would be adequate for the kitchen in place of the urn.

Space for parking food conveyors and tray trucks



KITCHEN FOR A 200-BED GENERAL HOSPITAL — USING CENTRALIZED BULK FOOD SERVICE

NOTE: If food waste grinders are not used garbage refrigerator and can washing room should be provided.

LEGEND

1. Screen door
2. Counter for checking deliveries
3. Hanging scale with pan, dial face, 60 lb. by 1 oz.
4. Paper towel cabinet
5. Waste paper receptacle
6. Mop truck
7. Shelf over
8. Curb and receptor or sink
9. Mop rack
10. Platform truck
11. Platform scale, 1000-lb. capacity, drop lever
12. Locked cabinet
13. Shelves, 16 in. deep, first shelf 36 in. from floor
14. Step ladder, pantry type
15. Storage can, mounted on casters
16. Table, 24 by 48 inches, on casters
17. Meat block
18. Sink, 2-compartment, each compartment, 24 by 24 by 14 in., 1 drainboard
19. Floor drain
20. Preparation table, 30 by 60 in., with drawer and undershelf
21. Meat hooks and rail
22. Refrigerator shelving, 18 in. deep, first shelf 36 in. from floor
23. Lavatory (handwashing)
24. Water cooler
25. Bulletin board, 26 by 24 in.
26. Telephone outlet
27. Peeler, 30-lb. capacity, pedestal type with peel trap
28. Food waste grinder, institutional size, with pre-rinse spray
29. Refrigerator (salad), 60-cu.-ft. capacity
30. Refrigerator (cook's), 50-cu.-ft. capacity
31. Counter, 30 by 96 in., cabinets below
32. Dietetic scale, gram
33. Wall cabinets
34. Counter, 30 by 120 in., open shelves below
35. Silver box, 4-compartment
36. Meat chopper, 8-lb.-per-minute capacity
37. Clean dish table with up-turned edge
38. Coffee urn stand
39. Coffee urn (battery), two 5-gal. coffee urns, one 10-gal. boiler
40. Ice cream cabinet, 20-gal. capacity. (Provide running water dip well if bulk ice cream is used.)
41. Food conveyer, 50-patient capacity
42. Electric outlet, ceiling drop, 4 receptacles
43. Tray truck, open, approximately 25-tray capacity (tray size approximately 14 by 18 in.)
44. Hot and cold water outlet
45. Sink, 3-compartment, each compartment 24 by 24 by 14 in., one compartment with dial thermometer, 2 drainboards
46. Proof box, 24 by 30 by 72 in.
47. Cooling rack, 24 by 18 by 72 in.
48. Mixer (bench type), 20-qt. capacity, with 12-qt. bowl
49. Cabinet stand for mixer
50. Baker's table, 30 by 72 in., with 2 drawers and overshelf
51. Baker's scale
52. Refrigerator, 20-cu.-ft. capacity
53. Sink, single-compartment, 24 by 24 by 14 in., 1 drainboard
54. Hot plate, 2-element flush with counter top (for baker)
55. Pot cabinet, 24 by 42 by 72 in., adjustable open shelving, on casters
56. Counter, bread storage cabinet below
57. Utility truck
58. Preparation table, 30 by 120 in., with drawer and undershelf
59. Oven, 3 sections, 2 sections for baking, 1 section for roasting with additional removable shelf, (deck 42 by 32 in.)
60. Kettle, steam-jacketed, trunnion, 10-gal. capacity
61. Swinging water spout over steam kettles (hot and cold water)
62. Kettle, steam-jacketed, 30-gal. capacity
63. Kettle, steam-jacketed, 60-gal. capacity
64. Steamer, 3-compartment, 6-bu. capacity
65. Floor depression
66. Hood
67. Spreader plate
68. Deep fat fryer, approximately 25-lb. capacity
69. Range, oven below
70. Broiler, double deck
71. Pot cabinet, 24 by 60 by 72 in., adjustable open shelving, on casters
72. Cook's table, 30 by 120 in., with 2 drawers and undershelf
73. Pot rack over cook's table
74. Meat slicer, motor driven
75. Sink, single-compartment, 24 by 24 by 14 in.
76. Electric outlet at floor
77. Mixer, 60-qt. capacity, with 30-qt. bowl
78. Hood
79. Dish table drain
80. Rack return
81. Dishwashing machine, single-tank, approximate capacity 4500 pieces per hour, automatic
82. Soiled dish table with 3-in. up-turned edge
83. Soak sink, 2-compartment
84. Slide rails (for conveying dish racks)
85. Glass washing machine
86. Dish table with up-turned edge (for clean glasses)
87. Straight chair
88. Bookcase
89. Swivel chair with arms
90. Desk
91. Food cutter, bowl 15-in. diameter
92. Locker
93. File cabinet
94. Ice-making machine
95. High windows
96. Table with up-turned edge
97. Vision panel
98. Kitchen tool rack

is out of the main line of traffic of the kitchen but convenient to the serving area. An effort has been made to have the food conveyors parked in such a way as to provide an aisle for access in loading on one side at all times.

Potwashing

The potwashing area is off the main traffic lines near the cooking unit from which most of its work comes and also near the storage area for food conveyors. This location makes it easy for the pots from the food conveyors to be cleaned and returned to the conveyors.

For potwashing, a three-compartment sink with two drainboards is indicated in all three plans. In the 100- and 200-bed plans, a food waste grinder is installed here to take care of waste from pans and food conveyors. It was omitted in the 50-bed plan because of the small amount of food waste that would be accumulated in this area. One compartment of each sink is equipped with a dial thermometer to insure adequate sanitization of the utensils. An open pot cabinet on casters with adjustable shelves is placed in this unit for the storage of clean pots.

Dishwashing

In all three plans, the dishwashing room is located at the entrance to the kitchen adjoining the tray set-up counter and on an exterior wall for natural ventilation. This unit is arranged so that it is convenient to the elevator leading to patients' area, convenient to the personnel dinning area, and to the patient tray set-up counter. All precautions have been taken to prevent the handling of soiled dishes and clean dishes by the same person. This plan requires that an employee be stationed at the clean dish table in the kitchen to handle clean dishes.

The dishwashing room is the noisest unit in the dietary department and is closed off. It is desirable that this unit be finished so that floors and walls can be easily washed. They should be moistureproof, and the ceiling should be acoustically treated. A hood to carry away the excess vapor is provided over the dishwashing machine.

It is planned that two employees will operate the dishwashing unit in the 200-bed hospital, one racking dishes for the dishwashing machine, the other for the glass washing. The dishwashing machine is of the fully automatic, single-tank type, with an approximate capacity of 4500 pieces per hour. The load of glasses from the 200-bed hospital seems sufficiently great to warrant the purchase of a glass-washing machine.

The 50- and 100-bed plans anticipate that only one employee will be in the dishwashing room. All china, glassware, and silverware will be washed in automatically timed machines. The dishwashing machine provided in the 100-bed plan is a single-tank, floor model with vertical sliding doors and an approximate capacity of 3000 pieces per hour. The same type of machine is used in the 50-bed plan with a capacity of 1250 pieces per hour. All three machines will accommodate a 14 by 18 in. tray.

The preflushing unit in this layout consists of a spray nozzle that is installed over the food waste grinder. A double compartment sink is provided for soaking.

A hot and cold water outlet is placed in the dishwashing room for truck washing, and a handwashing facility is available in the unit for the employees.

Office

In the 200-bed hospital plan, office space is provided for two dietitians, and in the 100-bed hospital plan, there is space for one. Desk space is provided in the 50-bed plan for the food supervisor. In all three plans, the office is so located that it will be possible for nurses, doctors, and salesmen to go to the dietitian's office without going through the main kitchen. Also for convenience, a telephone extension from this office is placed in the kitchen area of the 100- and 200-bed hospitals.

Employee Facilities

A water cooler is located within the kitchen area for the employees. Not shown on this plan, but close to the kitchen area, are lavatory and toilet facilities for dietary employees. Adequate handwashing facilities are in the food preparation and dishwashing areas.

Cafeteria

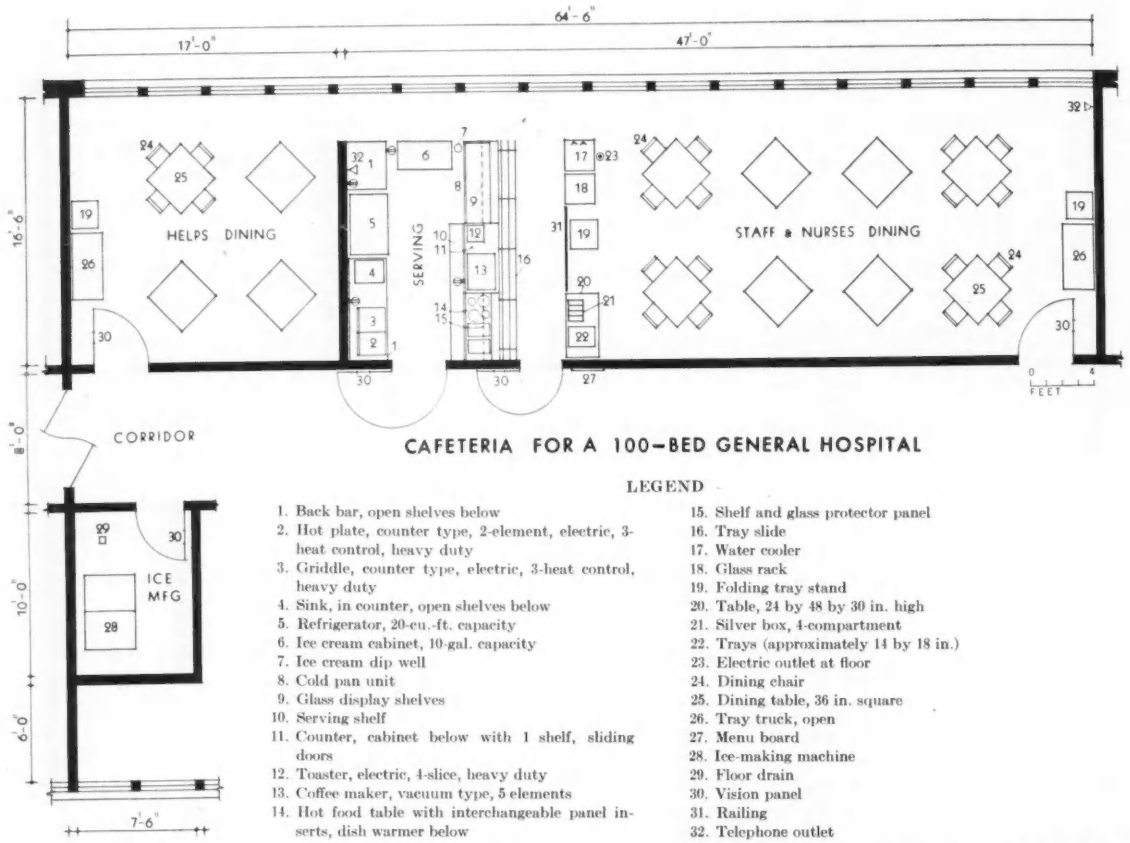
No kitchen plan would be complete without some provision for the cafeteria or dining room. The group served in such areas represents a much greater number than the patients. Moreover, equipping a cafeteria entails a larger expenditure.

Service to personnel in hospitals of over 50-bed capacity is usually cafeteria style. It has been found practical and workable to use only one serving line for all.

In this plan (Fig. 4), we have provided for the minimum amount of equipment to serve the staff of a 100-bed hospital. There is no provision for a cashier's station. It was thought that in this size facility, if the employees paid for their meals, it would probably be on the basis of a fixed amount per meal rather than by item or that meal tickets would be used.

The cafeteria is located close to the kitchen so that the food can be transported as short a distance as possible. The food would probably be replenished once or twice during the serving period. The cafeteria is also close to the dishwashing room for convenience in transporting dirty dishes.

Within the serving unit, space is provided for the storage of dishes, glassware, and serving utensils.



CAFETERIA FOR A 100-BED GENERAL HOSPITAL

LEGEND

1. Back bar, open shelves below
2. Hot plate, counter type, 2-element, electric, 3-heat control, heavy duty
3. Griddle, counter type, electric, 3-heat control, heavy duty
4. Sink, in counter, open shelves below
5. Refrigerator, 20-cu.-ft. capacity
6. Ice cream cabinet, 10-gal. capacity
7. Ice cream dip well
8. Cold pan unit
9. Glass display shelves
10. Serving shelf
11. Counter, cabinet below with 1 shelf, sliding doors
12. Toaster, electric, 4-slice, heavy duty
13. Coffee maker, vacuum type, 5 elements
14. Hot food table with interchangeable panel inserts, dish warmer below
15. Shelf and glass protector panel
16. Tray slide
17. Water cooler
18. Glass rack
19. Folding tray stand
20. Table, 24 by 48 by 30 in. high
21. Silver box, 4-compartment
22. Trays (approximately 14 by 18 in.)
23. Electric outlet at floor
24. Dining chair
25. Dining table, 36 in. square
26. Tray truck, open
27. Menu board
28. Ice-making machine
29. Floor drain
30. Vision panel
31. Railing
32. Telephone outlet

There is refrigerator space for storage of salads, desserts, milk, butter, and other items to be served on the cold counter. An ice cream storage cabinet and coffee preparation unit are in this area also.

The serving counter space is set up to accommodate a menu pattern that would be the same as the patients' with these exceptions:

(a) Choice of coffee, tea, or milk.
(b) Choice of cereal, hot or cold.
(c) Eggs prepared in several ways.
(d) Facilities for preparing griddle cakes and French toast.
(e) Choice of two meats.
(f) Choice of two vegetables.
(g) Choice of salad.
(h) One dessert.

The cafeteria would be staffed from the dietary department personnel, and there would be approximately three employees in this area at the height of the serving period.

Two dining areas are shown. Tables in the dining room are large enough to seat four people. The seating capacity is approximately three-fifths of the average number of patrons expected. A telephone, call system, and clock are provided in the large dining room.

An ice-making machine is placed adjacent to the dietitian's office and across the hall from the cafeteria. A machine that could furnish both cube and crushed ice would be most adaptable. Cubes would be used in iced beverages and crushed ice in the cold pan. It may be that a refrigerated unit would be preferred to crushed ice in the cold pan. This would depend upon individual preference.

Summary

The smooth flow of foods from receiving platform to preparation unit to patient and personnel depends on the proper functional layout as well as the proper size of equipment. Successful planning requires the cooperation of people trained in a variety of professions.

Basically the same types of operation must be be planned for in all kitchens, regardless of size.

To determine the correct type, amount, and size of equipment to be used in the units of hospitals of 50-, 100-, and 200-bed capacity, a study was made of the menus as well as the quantity of representative foods that were to be prepared in each kitchen. Consideration was given to the standard size pans that could be used interchangeably and the time required in preparation. For example, to determine

the amount of oven space needed for both roasting and baking, the representative foods used were roast beef, pork loin, meat loaf, roast turkey, Parker House rolls, chocolate cake, cherry pie, oatmeal cookies, and muffins.

Certainly no planning is complete without an evaluation of the service that results. In the case of the dietary department, the proof of the pudding is certainly in the eating and regardless of how efficiently the food service is planned, the final responsibility rests with management to use its facilities to maximum advantage to provide appetizing and nourishing food to both patients and personnel.

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Facts about Prunes

Prunes originally came from the Caucasus Mountains and the area around the Caspian Sea. Gradually, Central Europe and the Balkan states became notable producing areas, but today the greatest prune crop comes from California. The French prune, excellent in quality, high in sugar content, and with a fine texture and small pit, is the most popular variety. Other varieties are Robe de Sergenat, Imperial, and Sugar prunes.

When prunes become completely ripe, they fall to the ground from their own weight and are carefully gathered by hand. They are dipped in a mild boiling alkaline solution from 5 to 15 seconds to "check" or criss-cross the skins with tiny cracks, which allow moisture to escape readily and evenly during drying. After this rapid dip, the fruit is thoroughly rinsed and spread out in large wooden trays in single layers to dry.

These trays are stacked and placed in dehydrators and the prunes dried in 18 to 24 hr. under carefully controlled temperature and humidity. Sun drying was the original method of drying prunes and a small percentage is still dried this way.

Prunes are graded for size and stored in separate bins. As orders are received, the fruit is washed thoroughly by machinery and immersed in boiling water for sterilization. Then it is passed over shaker screens to remove excess moisture, and the hot fruit is packed immediately and sealed in 30-lb. or in 1- and 2-lb. packages. Prunes are commonly graded as follows:

SIZE	AVERAGE COUNT PER POUND
Small	85
Medium	67
Large	53
Extra large	43 or less

However, sometimes prunes are described as "30/40," "40/50," "50/60"—i.e., between 30 and 40 prunes per pound; thus they would be correctly called "extra large."

Prunes are an excellent source of riboflavin and vitamin A; they also contain thiamine, pyridoxine, pantothenic acid, iron, and copper. A pound of prunes contains from 1036 to 1548 calories. They are a concentrated food. The fresh fruit averages 13 per cent sugar; dried fruit, 44 per cent. About 2½ lb. fresh fruit make 1 lb. dried fruit, and 1 lb. prunes when cooked yields a little over 2 lb., or approximately 12 servings of 5 prunes each.

The best cooking method is quick-cooking. The fruit is rinsed, covered with water, and cooked until tender. Sweetening, if any, is added during the last 5 min. of cooking. New processing methods eliminate the necessity of soaking; however, the cooked dried fruit becomes more plump and the cooking liquid more flavorsome, if it is allowed to stand in its own liquid for several hours before serving.—*Ilma Lucas Dolan, Dietitian, California Dried Fruit Research Institute, San Francisco.*

Psychologic Factors in Employee Training[1]

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WE recognize training as an important part of supervisory responsibility. Whether our responsibility is direct or indirect, we know that many of our problems grow out of faulty training. We have no quarrel with the statement that training is one of the major responsibilities of a supervisor, but we recognize a good many difficulties. We see evidence of failure in training, but we are not sure what we can do about it. We know we have employees who need training, but we do not know how to help them. Training is a recurring topic wherever supervisors meet, and one which is always worth talking about.

In this paper I propose to review the problem of training with the idea of trying to clarify our thinking and of helping us to rearrange some of the things we already know so that they may be more useful. If we can look at this "hidden knowledge" and bring some of it into use again, we will have made a start toward solving our training problems.

We often say that we do not have time to do training. Such a statement seems so obvious that it never occurs to us to question it. However, I would like to suggest that the statement is incorrect. We do not neglect training; we do it all the time. And, many of the things we do are wrong. When we say to an employee, "Don't bother me now, I'm busy," we are training him. We are training him not to bring his problems to us; we are training him to believe that we won't help him anyway, so why bother to ask. I have used this approach several times in training stenographers, when I have said, "There's your desk. You'll catch on in a few days." They did catch on, but not exactly as I had hoped. I have never been able to avoid the training job. I have only been able to postpone it and thereby make it more difficult.

If we are training all the time, we cannot afford to do it carelessly. We do not have time to overlook training if we want to develop satisfactory employees. Such a view, of course, defines training as being basic to all human relations and job performance. It means that as habits are set, so will future performance be determined. This, incidentally, is a pretty good definition of training. The task we face is that of developing a multitude of habits in a group of individuals, so that they will function as satisfactory employees. To do this, we must give attention to training in at least three ways:

(a) *The casual contacts.* Each errand, request, suggestion, and odd job given to an employee makes a contribution to his training. Attitudes are formed and general habits of work are developed.

(b) *Development of skills.* This is the area about which speeches are usually made and which most people regard as being the whole of "training." It includes learning the specific skills, such as setting a table, running a mixing machine, or washing dishes.

(c) *Development of people.* A long term plan to encourage the growth of a person from a not-very-good employee to a better one is, or should be, part of every supervisor's responsibility. Without such a plan, there is little hope that employees will improve.

Training must be based on a considerable knowledge of human beings and how they operate. This is not the place to review all of psychology, but I can emphasize that competence in teaching grows out of a study of human beings. The practical application of sound principles to the task of training is not particularly difficult, but it does require study. This need not be textbook study, but it must result in using logic in everyday affairs and giving thoughtful consideration to the way we approach our training problems. It implies that we study our experience and analyze it critically. I don't know that anyone ever learned to teach from the study of a textbook, but I am sure that if he ever became a good teacher, it was because he learned to apply many of the principles which can be found in textbooks. Where he learns is not important, but it is important that

[1] Presented before the Illinois Dietetic Association in Springfield, on November 3, 1950.

every teacher and supervisor understand some of the basic principles of how human beings learn.

It is sometimes said that the task of training and supervision is "getting people to want to do what I want them to do, the way I want them to do it." Perhaps we might also add, "when I want it done." Such a statement sums up the problem very neatly. It can also supply a way to analyze some of the psychologic factors involved. It says that the task involves *what*, *how*, and *when*.

WHAT PEOPLE WILL WANT TO DO

How many employees *want* to do the things you want them to do? I am reasonably sure that you have frequently assumed that everyone wants the same things you do. We are likely to say that everyone wants money, everyone wants an automobile, every woman wants a husband, every man wants a wife, and everyone wants a better job. These things are true, but they are general statements. If we go a step farther and say that everyone wants a million dollars, everyone wants a Cadillac, every woman wants my husband, every man wants my wife, and all the employees in the department are after my job, some doubts begin to appear.

It is easy to say that everyone should want the same things I do, but it is quite a different matter to find people who actually do. It always comes as a shock to discover how few people really want the same things I do. Some similarities exist in broad "wants," but as we get more specific, the likeness grows less. In regard to "doing what I want done," the chances are poor of finding many people whose wants conform to mine. If employees ever want to do the things you want them to do, it will be because some changes have taken place in their desires. It may be because of something you have done. This is why we turn to training—which is one way by which changes are made in what people want.

HOW THE JOB WILL BE DONE

What are my chances of finding employees who will do things *the way* I do them? It is a common observation that other people do not do things the way I do. They may obtain similar results, but the way they get them is often quite different. Unless they have had much the same experiences and unless they have tried to develop the same skill, they will not do it as I do. Recognizing this difference, we much more readily and quickly turn to training, for we know there is little chance of finding people who will do things "my way" unless they have practiced doing so.

In discussing the difficulties in getting things done "my way," there is another point which should be considered. As supervisors and teachers, we need to decide clearly "how the job is to be done" before we start. We cannot explain what we want if we do not understand it ourselves.

We also need to develop standards of performance, and, what may be more important, the variations which will be acceptable. Men in machine shops know this very well. Dimensions for a piece of work are always given with a plus and minus. If the machine operator stays within these limits, he is doing satisfactory work. The schools know this, too. The old system of marks, with which we are familiar, set 100 as perfect but would accept 75 as passing. Schools are often accused of teaching for mediocrity. Anything less than perfection should be failure, the critics say. I insist that they are merely more realistic.

There is always variation. Perfection is a nice goal, but it is seldom attained. I have yet to have an employee or a student bring me a piece of work that measured up to my standards. I have always had to adjust my ideas of how a job should be done to fit what I was likely to receive. Learning to do accurate work can be likened to target shooting. We will not hit the bull's eye the first time, but our score can be improved with practice. However, I have never known anyone who did it every time. I even doubt if Annie Oakley did, although tradition would have us believe so. There is no reason to believe an employee will do exactly as we wish the first time he tries. Experience should tell us that if we ever get what we want in the way we want it, considerable practice will be involved.

WHEN THE JOB WILL BE DONE

What are my chances of getting work done *when* I want it done? This rests on an assumption that the other person wants to do it, can do it, and sees the necessity for doing it *now*. My children are most exasperating in this respect. They want to do something, even agree that it should be done. It is something they can do and will do quite well, even by my standards. But, they will do it when they are "good and ready," and there isn't much I can do to speed them up. You can say this all goes back to the strength of the "want" and be perfectly correct. It merely emphasizes the "get them to want" to do what I want. My chances of getting it done when I want it done depend, to a large extent, on establishing the original want.

All of this leads to a summary statement of principle. The initial premise, the basic consideration, the point of departure, must be: There is no particular reason why the person should want to do it at all. This puts a different light on the training problem. It places a different responsibility on the supervisor as a trainer. It means that if the employee ever wants to do what I want him to do, it will be because of a common purpose. Our initial task is to learn whether this common purpose exists. If it does not (as is probably the case), then we must develop it. It means that we must provide a reason for him to do it. We must provide an incentive, and our usual

approach to incentive and common purpose is definitely unimaginative.

Furthermore, before I leave this idea, I would like to add that the development of a "desire to do" is often not nearly as difficult as we think. Most employees want to do what the supervisor wants done, *if* they can discover what it is. I would emphasize the "if," for this is no easy task for the employee. Many employees have long ago given up trying to find out what the boss wants done.

SOME PRINCIPLES OF LEARNING

Almost everything I have said can be summed up by one word—what the psychologist calls "motivation." Getting people to want to do things is the first step in training, and the one on which all the rest of the process depends. I do not propose to make a complete analysis of learning theory, for the psychology of learning is a complicated subject, but from the research on learning have come some things which are useful in the practical problem of training employees. If the findings of the research worker are coupled with some good sense and everyday logic, they provide some principles which we may use with profit.

I have become accustomed to summing up my learning theory in five points. They overlap considerably, but they are distinct enough to discuss separately.

(a) *The learner must be motivated.* If there is no motive, there will be no learning. There must be some need, desire, want, or interest, which the learning will satisfy. This is the idea expressed by the saying, "You can lead a horse to water, but you cannot make him drink." We frequently spend much effort on making the learning attractive, but we do not often spend much time trying to develop the desire.

(b) *The learner must intend to learn.* He must be ready to learn the particular task involved. He must be willing to start, understand what is to be learned, and have no resistance to the process. In addition, there must be some stimulus to begin. Most of us will not take active steps toward learning without some sort of "push" from the outside. This is the place where the teacher or supervisor can play an important part.

(c) *The learner must pay attention.* He must direct his senses toward the material to be learned. We often say that he must concentrate, apply himself, study, and work, or no learning will take place. We recognize that the only approach we have to the processes of the mind is through the machinery of the body. Unless the learner directs his attention, no learning can take place. Anything which distracts attention slows up the learning process.

(d) *The learner must practice.* Little learning takes place without activity of some sort. Exercise is a common requirement for learning. We see this easily enough in developing skills, where it is a case of try and try again. We do not see it so clearly in the so-called mental learning, but it is there. We have not learned a simple direction unless we can repeat it. We have not acquired knowledge until we have catalogued it in our own minds.

(e) *The learner must gain satisfaction.* He must meet with success. Each step he takes must contribute satisfactory progress toward a goal, or the learning process is slowed up. This is where the incentive becomes important. The learning must lead toward whatever it was that he set out to do in the first place, if he is to continue. This is the place where praise and the pat on the back becomes important.

In some respects this is an oversimplification, but it serves the purpose of emphasizing that the learning process does not depend on one activity alone. It is a process, and all of the various steps must be taken although they obviously overlap. Each step will not be taken separately, but if learning proceeds smoothly each will be provided for. As it is expressed by Miller and Dollard, the learner must want something, notice something, do something, and get something.

SUMMARY

There are several points which can be listed in summary.

(a) We should regard even simple requests as training. In errands and odd jobs are all the elements of learning—motive, attention, doing, and success. When added together, these contacts constitute a training program in themselves. Habits are built one step at a time. Attitudes grow out of repeated experience.

(b) It is a good idea to operate on the principle that "there is no particular reason why the other person should want to do a job." This is never completely true, but if we start from such an idea we will do a better job of developing interest. Most people are willing to do what we want them to do, in their fashion. However, they never have as much "want to" or "enthusiasm" as we desire and often assume.

(c) Develop clear standards of what we regard to be good work. We cannot explain what we want done unless we know what it is. Most of us do not know clearly and exactly what we do want. It is also well to decide how much deviation from this standard we can accept. We need to know what variations are acceptable, because we can never expect to get exactly what we want.

(d) Develop some "satisfactions" for doing good work. If we want a performance that is better than just "good enough," we must supply some reason to the person for doing it. The approach of "do it or else" results in minimum compliance. So does money. It is easy to believe that I am a "sucker"

to do more than the minimum for my wage. When I do the "extras," it is for some other reason.

(e) Plan your training. There are three kinds which I believe should be included. The first, the incidental contacts, we handle very badly. We seldom give them the importance they deserve. We fail to use them to develop sound relationships and morale. The second, training in specific skills, we do pretty well. When we get a new machine, we are likely to teach everybody to run it, whether they need to know or not. The weak spot in skill training is with the older employees. We are likely to say, "they should know," and then fail to give them the training they need. The third, the long-term development of employees, is usually poorly done. We make no plans for our employees, we just hope. In many respects, it is like fixing the roof. When it is raining, we can't do it; when the sun is shining, we don't need to. The only time we worry about employee development is when somebody quits or dies and we are faced with the necessity of making a replacement. In all of our training, we overlook a very important point. The time to do training is before the need arises. Unless we have a plan, unless we have taken some steps in advance, we will not be prepared to face an emergency.

(f) If our employees don't learn, a good deal of the fault lies with us. When my lessons fail, I as the teacher have contributed to the failure. When an audience does not listen to me, I can scarcely blame anyone but myself. Such a view, of course, assumes the task to be appropriate, but that too is my responsibility. I can make no excuse for presenting material which is too difficult for the group. As a supervisor I cannot justify keeping people on jobs for which they are not adequate. Assuming capacity and appropriateness of the task, the teacher cannot avoid blame. Perhaps this idea can be carried too far, but I resent the professor and supervisor who self-righteously point out how "dumb" their people are.

(g) Training is a continuous job. All of us wish it weren't. We have assumed that we went to school to be trained, and then life began. The facts do not bear out this belief. Apparently the need for learning never ceases. We no sooner get an employee trained than the situation changes and we must begin again. The need for training seems to continue as long as we continue to work.

Some of our difficulty with training stems from our feeling that we really should not have to train our employees. They should take care of themselves. What we really mean, when we say that "we don't have time for training" is that we don't want to be bothered with it. We wish that we had a lovely group of people who would always do what is right (according to our ideas of right) and who would read our minds and do everything we want done. We long for some miracle to save us from the difficulties of training, and we dislike facing the reality of knowing that if our employees ever learn to do a good job we will have to make some contribution to their training.

One of my main complaints against modern supervision is that supervisors do not supervise. When they themselves define supervision, they always emphasize the importance of developing people, training them in necessary skills, and getting them to do things. Almost every supervisor will agree that this is an important part of the job, and yet almost every supervisor continues to be engrossed in numerous details which interfere with this development. One reason we have trouble "getting people to want to do what we want them to do the way we want them to do it" is because we've never really tried. We've contented ourselves with being "mad" because they didn't do it automatically.

Aged Fruit Cakes

Some authorities attribute the origin of fruit cake to the ancient Egyptians. In contrast to modern America where one may walk into a neighborhood bakery and buy a delicious, beautifully-wrapped fruit cake, the Egyptian homemaker and her family ground their own wheat into meal, then gathered rare spices, oil and honey, and tropical fruits, some of which they preserved by drying in the sun. To a combination of these ingredients, they added spices and other aromatic substances for flavor and formed the mixture into cakes. Cakes similar to those made by the Egyptians were also found in Rome and early Spain.

British sailors of the early days who traveled in the Orient and other foreign ports returned with stories of the cakes made of fruit and brought the ingredients back with them. From Greece and Turkey, they obtained currants and raisins; from Italy, citrus peel preserved in honey; from Spain, almonds; and from the Orient, strange seeds and barks of trees which, when pounded in a mortar, gave a pleasant spiciness to the cakes. The English seafarers used these ingredients for trading to make money for more expeditions. British bakers, on seeing the fruits and spices and hearing the tales of the aromatic cakes, soon learned to make them, and they became famous for their heavily laden fruit cakes. Recipes for the cakes were jealously guarded and handed down from one generation of bakers to the next, as they are to to some extent today, and when they migrated to America, the bakers brought their precious recipes with them.

Work Simplification—A Tool in Reducing Food Costs[1]

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In hospitals, colleges, and other institutions where the dietitian's services are essential, the problem of cost reduction is important. It is here that the dietitian has a large role, for she is often in a position to lead the way to the reduction of costs in the preparation and service of food.

This paper will point out improvements that have been obtained through the application of industrial engineering techniques to both industrial and dietary operations, and it will discuss the specific techniques that were used, as well as the proper integration of these techniques to the activities of the food service department. From this discussion, it is hoped that the food service manager and the dietitian will see further applications of these tools in their own work.

The possible improvements in operating efficiency that can be obtained in food service operations are indicated by the reports of two work simplification studies carried on by the Columbia University Department of Industrial Engineering. These studies have provided improved methods for serving food in both a college cafeteria and a hospital. The results of these studies have conclusively shown that the techniques of work simplification have universal application.

Especially impressive has been the extent to which the operations performed in food service departments lend themselves to improvement through work simplification. From the receiving of the raw materials to the processing of the food in the various kitchens and on to the delivery to the final consumer, there are operations which can readily be studied and improved in much the same manner as with industrial operations.

In one study concerned with food service for hospital patients, an analysis of methods indicated deficiencies which when modified and improved resulted in the reduction of work force and other savings valued at $6900 a year. Incidental to this study was an examination of the relative advantages of centralized versus decentralized dishwashing operations. The study indicated the economic merit of modifying the original plan which called for the installation of individual dishwashing centers so that only three centralized dishwashing units would be required. This revision represented a saving in equipment investment of $71,000.

In the second study devoted to dietary operations, the application of the balancing techniques developed for use with assembly lines resulted in a significant expansion of the serving capacity of a college cafeteria. In this investigation, time studies were made to determine the unit times for the various operations in the serving line. The elimination or simplification of those operations which proved to be bottlenecks reduced the time required to pass through the line and provided for more rapid service. This improvement was achieved through the relocation of certain work places, the modification of existing equipment, and the simplification of work methods.

It has been our experience that industrial operations differ from food service operations only in the number of workers who may perform any one operation. It is doubtful that there are many food service activities where as many as fifteen workers are performing the same or similar tasks. While large dollar savings may not result from many single studies, the continual application of work simplification will produce substantial reductions in operating costs for the dietitian.

Another well-known and outstanding application of work simplification was recently undertaken for the New York Heart Association by a group of industrial engineers and home economists working under the leadership of Dr. Lillian Gilbreth. This group of specialists developed improved methods and layouts for equipment which brought kitchen operations within the capacity of physically handicapped persons. Many of the developments which

[1] Presented at the 33rd Annual Meeting of The American Dietetic Association in Washington, D. C., on October 20, 1950.

resulted from this particular investigation are now being incorporated into commercial equipment.

These results have been summarized because they show that in every type of activity the application of work simplification has produced the same results: increased production, reduced worker fatigue, and improved efficiency. The application of industrial engineering techniques to food service operations is a new and challenging undertaking.

The techniques of work simplification may be classified as follows:

I. Techniques of analysis
  A. Process analysis
    1. Operation process chart
    2. Flow process chart
    3. Flow diagram
    4. Work distribution chart
  B. Operation analysis
    1. Man-machine chart
    2. Right-left hand chart
    3. Multiple-activity chart
    4. Micromotion analysis
  C. The analytic approach
    1. Why?
    2. What?
    3. When?
    4. Where?
    5. Who?
    6. How?

II. Techniques of synthesis
  A. Methods of improvement
    1. Eliminate
    2. Combine
    3. Change sequence
    4. Simplify
  B. Application of principles of motion economy

III. Techniques of administration
  A. Introduction of new methods
  B. Integration
    1. Supervision of projects
    2. Training

The above outline presents, in sequence, the various phases of a complete program in work simplification. First, it is essential to define adequately the problem under consideration. Then it is necessary to gather and to analyze all the pertinent information, using the techniques of analysis listed. The proper development of an improved method depends upon the elimination of all unnecessary work elements followed by the simplification of each remaining necessary element. This simplification is facilitated by using the principles of motion economy. The result is a new and completely improved method, but the largest obstacle yet remains to be overcome. It is still necessary to introduce the new method and to pursue it until the full benefit of the improvement is obtained. The introduction of the new method must be accomplished in the face of the natural resistance to change which prevails in many organizations. The problem here is to develop cooperation and understanding on the part of the workers so that the introduction of the improved methods will be facilitated and not impeded.

It is appropriate here to direct attention to the two types of analysis techniques—process analysis and operation analysis. This classification emphasizes the two levels at which each problem must be approached. One is general; the other is specific. Frequently much time has been devoted to the study of a specific operation, only to learn after a later study of the over-all process that the operation itself could be eliminated. Thus the over-all relationships should be examined before devoting attention to any specific phase of the problem.

PROCESS ANALYSIS

One of the most useful tools available for the process analysis of a complete process is the *operation process chart*. It can be used with equal effectiveness to represent the assembly of an electric motor or the preparation of a beef stew, for in a simplified manner, it shows the entire sequence of operations for use in analysis or in training. The addition of each new component and each step in the process can be clearly indicated.

The *flow process chart*, another extremely useful tool of process analysis, should be prepared when more information is required than is presented by the operation process chart. Whereas the operation process chart includes only data referring to the operations and inspections in the process, the flow process chart also presents information on the movement of materials and workers and indicates any interferences which prevent a smooth flow of production. In food service activities, as well as in industrial operations, the movement of materials is an important cost factor. The flow process chart will in many cases point out possibilities for substantial reductions of such costs. Furthermore, the data concerning the points in the process at which material is stored or the flow of materials is delayed, may be useful in achieving faster inventory turnover which can often be the means to important cost reductions.

The operation process and the flow process charts are prepared by listing each pertinent activity in the process and representing each by its proper symbol given in Figure 1, which is taken from the standard on process charting, developed by the American Society of Mechanical Engineers (1). The time required to perform each activity and the distance traveled is also indicated on the chart, which then becomes a permanent and easily understood record of the entire process.

Despite their wide application, the operation and flow process charts have the shortcoming of not indicating the physical location of the various stations at which the activities take place. Certain valuable

SYMBOL	CLASSIFICATION	PREDOMINANT RESULT
○	operation	produces or accomplishes
⇨	transportation	moves
□	inspection	verifies
D	delay	interferes
▽	storage	keeps

Fig. 1. *Symbols used in preparing operation process and flow process charts.*

information may be lost because of this. Therefore, it is often necessary to supplement the operation and/or flow process chart with a *flow diagram.*

This consists of a floor plan on which has been indicated the movement of the object being charted. Flow diagrams can be readily applied to kitchen layouts to produce substantial reductions in costs.

The *work distribution chart* is useful as a guide to the relative importance of the various activities. This information is important when there are many activities to be studied in a limited amount of time. The work distribution chart lists the functions performed, together with the time devoted to each function by each worker and supervisor. When the information is correlated with labor rates, it becomes possible to evaluate each function on the basis of direct labor cost.

Priority for further study may then be given to specific operations which are high in cost, which constitute bottlenecks, or which require unusual skills or expensive equipment. Sometimes a preliminary study will indicate possible savings to be obtained from the operation and, also, the cost of inaugurating the improvement. This information permits operations to be compared on the basis of the time required to return the investment.

OPERATION ANALYSIS

The tools for the analysis of operations include the man-machine chart, the right-left hand chart, the multiple-activity chart, and a micromotion analysis. These techniques have in common the characteristics of comparing the activities of several operational components to indicate possibilities for improvement.

The *man-machine chart* consists of a time scale against which the activities of an operator and of a machine are compared. Starting at a common time, the work elements of the operator and of the machine are charted so that simultaneous activities are indicated. This method of presentation clearly indicates the existence of interference or idleness. The man-machine chart can be used to reduce over-all time of a production cycle by indicating which elements can be performed by the worker while the machine is operating. As in industry, there are many operations in food preparation which involve semi-automatic machines and which can be improved by using a man-machine chart.

The *right-left hand chart* is similar to the man-machine chart except that it charts the simultaneous motions of the operator's hands. It can be used to bring the motions of the hands into more perfect balance by revealing the existence of unnecessary motions, of unbalanced motions, and of idle periods.

The right-left hand and the man-machine charts are specific applications of a more general type of analysis chart, the *multiple-activity chart.* Using the same principle of time comparison, the multiple-activity chart permits the comparison of several operators, of several machines, or of mixed groups of operators and machines. In each case the final aim is to bring the action phases of each component into balance and to eliminate idle time. Preparation of the man-machine chart may show that the machine is idle for a considerable period while the operator prepares the materials to be processed. In such cases, the right-left hand chart may be used to improve the operator's method and thereby bring the operator cycle and the machine cycle into more perfect balance.

Where extremely short time elements are involved, *micromotion analysis* will often point the way to important improvements. This technique is based on the use of a motion picture camera set to operate at 1000 frames per minute. By projecting the film at a variable rate of speed, it is possible to determine accurately the time required to perform each element of the work. Frank Gilbreth, pioneer industrial engineer and originator of micromotion analysis, developed a series of basic motion elements, or "therbligs," into which a motion series could be divided. Through the simomotion chart which results from a micromotion analysis, the motions of the right and left hands can be compared in terms of these therbligs. When the number of motions has been reduced to a minimum, when there is no idle time for either hand, and when the hands move simultaneously, the method has reached a high level of efficiency. However, because of the cost of the equipment involved and the time required to prepare and analyze the film, micromotion analysis techniques should be reserved for operations which cannot be satisfactorily studied with simpler techniques.

ANALYTIC APPROACH

The preparation of the various charts used in work simplification require the full use of the analytic approach. By continually asking: Why? What? When? Where? Who? and How?, it is possible to gather information that will lead to obvious improvements in the method. No bit of information should be overlooked and nothing taken for granted.

METHODS OF IMPROVEMENT

When complete information concerning the process or operation has been gathered, a new method can be developed. The first step involves the elimination of all unnecessary elements in the present method. The opportunities for combining and rearranging work elements to improve the sequence should be investigated. Finally each remaining necessary element should be simplified by the application of the principles of motion economy.

PRINCIPLES OF MOTION ECONOMY

The principles of motion economy apply to the layout of the working place, to the use of the body members, and to the design of the tools and equipment. Many books on time and motion study, such as Barnes (2), include a complete listing of principles of motion economy. Among the more useful are the following:

(a) Smooth, continuous motions of the hands are preferable to zig-zag motions or motions involving sudden or sharp changes in direction.

(b) The sequence of motions should be arranged to build rhythm and automaticity into the operation.

(c) The hands should be relieved of all work that can be done by the feet or other parts of the body.

(d) There should be a fixed and definite place for all tools and materials.

(e) Drop disposal and gravity feed chutes should be used wherever possible.

The proper application of these principles of motion economy will do much to reduce worker fatigue on the job and to increase output.

TECHNIQUES OF ADMINISTRATION

The tools which have been discussed are in a sense mechanical, as are tools in general. The major problem in work simplification, however, involves handling human aspects of changing methods and stimulating active participation in methods improvement throughout the entire work force.

Work simplification is based on the belief that the worker and the supervisor are able to participate actively in the improvement of work details. Often they are able to make suggestions leading to significant improvement, and this source of ideas should not be overlooked. A suitably designed suggestion system calling for financial or even non-financial rewards will often increase the number of improvements proposed by the workers.

TRAINING

Participation can be encouraged and expanded by appropriate training programs in work simplification. Even where the training program does not prepare the worker or the supervisor to handle complete projects, the benefit resulting from having a work force capable of detecting operations in need of improvement is considerable. This was emphasized by the experience of those plants which cooperated with the government's Job Methods Training program during the war.

Training in work simplification is best handled through formal classes which may meet once or twice a week for as long as necessary. A total of 20 hr. of such instruction is often sufficient to produce satisfactory results. By making the supervisor conscious of motions, this training will also improve her ability to train new workers. Once the supervisors have been trained in work simplification, they should be encouraged to pass on their knowledge to the workers, who are often able to devise small improvements in their own work if they have been shown how such improvements are accomplished.

This full cooperation in the improvement of work details will rarely exist in any but an atmosphere of understanding and confidence, however. It is imperative that the workers and the supervisors be told the reasons for any changes before they are made. To the worker and to the supervisor, changes in methods may mean reduction in job security or loss of job status. If this source of fear is overlooked or not removed, failure of the work simplification program may result.

Overcoming this fear is especially important where workers are to be displaced as a result of a change. Alternate methods for handling such a situation should be studied and provision made for transferring or retraining the workers whose jobs will be eliminated. Although such considerations may add to the cost of the change, it is a small price to pay for full cooperation.

There remains the problem of assigning the responsibility for supervising the work simplification program. Only rarely is the line supervisor able to undertake a program of work simplification within his own group. Because methods changes may have consequences throughout the entire food service department, it is best that work simplification be assigned to a staff specialist who answers directly to the manager of the department. Sometimes it may be necessary to assign responsibility for the work simplification program to a person who must devote some of her attention to other problems. Although such an arrangement is less desirable, it will result in improved methods as long as she does not permit the pressure of meeting operating problems to interfere with her work simplification activities.

In conclusion, it is well to repeat that in view of the increasing operational costs, it is essential that every effort be devoted to the improvement of operating efficiency. Because it leads to the reduction of costs where they have risen most, work simplification can be extremely useful to the dietitian and the food service manager.

The worker benefits from the introduction of improved methods resulting from work simplification,

for more output is achieved with less effort and less fatigue. It brings satisfaction to the worker because every part of his job is essential. The worker may also look forward to other long-range benefits related to the increased productivity which results from the application of work simplification.

The supervisor benefits, for more of her time can be devoted to non-routine problems if the workers are well trained to follow efficient methods. The sincere supervisor finds satisfaction in the increased efficiency of her workers.

With these benefits in mind, the process charts, the flow diagrams, and the other techniques of work simplification take on added significance for the dietitian and the food service manager. The application of work simplification and other industrial engineering techniques is responsible for the great advances in industrial productive efficiency that have taken place in this country. There is a growing realization that the same attention to reducing operating costs and to increasing operating efficiency that exists in industry must also be the basic philosophy to be followed in the operation of the food service department. Because the application of work simplification to this end is a new and challenging undertaking, there is no question that it will become an integral phase of the operation of dietary departments.

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Antibiotics in Preventing Dietary Liver Disease in Rats

Prevention of liver diseases may be made easier through research with antibiotics and germ-free animals conducted by Dr. Paul Gyorgy, University of Pennsylvania School of Medicine, and Professor J. A. Reyneirs and associates at the Germ-Free Life Laboratory, University of Notre Dame. At the recent Diamond Jubilee Meeting of the American Chemical Society, Dr. Gyorgy reported that animals fed deficient diets which ordinarily cause necrosis or destruction of the liver did not get the disease so quickly if they also received certain antibiotics—apparently because of the action of the antibiotics against bacteria in their intestines.

Germ-free rats lived twice as long as non-germ-free control animals fed the same diet. The controls died of massive hemorrhagic necrosis of the liver, while the germ-free rats at autopsy showed no necrosis. Their weight curve also was very satisfactory in contrast to the flat curve of the control animals, according to Dr. Gyorgy.

Up to 1950, the experimental approach to liver diseases had produced four main results:

(a) Recognition of purely nutritional factors as important in determining causes of hepatic (liver) injury.

(b) The prevention, arrest, and even possible reversal of this pathologic process simply by proper change in the composition of the experimental diet.

(c) The interrelation between dietary and endocrine factors in the development of liver injury.

(d) The concept that experimental dietary injury to the liver is often combined in the same animal with specific manifestations in the kidney, in particular with acute necrotising nephrosis (death of kidney tubules).

Dietary factors that helped prevent cirrhosis had one common denominator—a sufficient supply of choline and its precursors, including methionine. The benefit seen after administration of vitamin B_{12} may be due to its choline-sparing effect.

In acute liver disease with massive necrosis, the beneficial dietary factors are cystine and methionine, or vitamin E. Since vitamin E and amino acids are so different chemically, Dr. Gyorgy stated it is difficult to reconcile pure deficiency as the possible cause of dietary hepatic necrosis with the interchangeability of those compounds in preventing necrosis. The assumption has been made that their beneficial effect more probably results from an underlying detoxifying mechanism than from the supply of a deficient nutritional factor. In dietary hepatic necrosis, such toxic factors may originate in the intermediary metabolism or under the influence of intestinal flora.

Therefore, since 1950, researchers have sought to eliminate or modify the intestinal bacteria by giving antimicrobial drugs. Neomycin, penicillin, terramycin, and aureomycin "exerted a very definite delaying effect on the production of experimental necrosis of the liver." The differences may depend on the varying range of bacteria against which each is effective and on the ease with which they develop resistant strains in the intestinal flora.

All the antimicrobial agents tested produced temporary stimulation of growth in the experimental animals. Furthermore, the beneficial effect of aureomycin and terramycin was not limited to the delay of hepatic necrosis, but manifested itself also in the prevention of hepatic cirrhosis in rats.

Use of Checked Seven-Day Records in a Dietary Survey[1]

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MANY methods have been used to collect dietary data in the evaluation of the nutritional status of population groups and individuals. Workers have used dietary histories (1), one-day food records (2), food records of seven or more days (3), and actual weight of the food ingested (4), which has sometimes been augmented by chemical analysis for the nutrients. Some of these methods involve much labor and expense and are unwieldy when applied to large groups. There is also the question of which of the various methods gives an accurate estimation of the nutrient intake. Valuable information on the comparison of some of these methods commonly used in dietary surveys will be forthcoming from the Northeastern Regional Project on Nutritional Status.

Seven-day records of food eaten can usually be obtained from cooperative subjects, but the accuracy of these records is often questioned by the nutritionist. The purpose of this study was to compare the calculated nutritive value of a seven-day dietary record checked by a nutritionist with the subject and the nutritive value of the same record unchecked.

METHODS

Subjects

Seventh and eighth grade pupils from families in a low-income group in a New York State suburban area with a population of 4,520[2] participated in this study. Forty-two boys and forty-five girls submitted seven-day dietary records for the study.

Dietary Records

The dietary records for the seven-day period were kept in booklets which had directions on the cover for recording the food eaten. Also included were places for the name of the child, his record number, the dates during which the food intake was recorded, and the school. Inside the booklets spaces were designated for recording the date of each day, the time and place of eating, the kind and amount of food consumed, and a description of food consumed (5).

The home-room teachers, who had been instructed by the nutritionist, distributed the dietary record booklets and, at the time of distribution, explained to the pupils the method of recording their food intakes.

Check of Dietary Records

At the end of the seven-day period, nutritionists checked the food records with the children for size of servings, foods that were in unusual dishes, possible omission of between-meal foods and of such items as butter and salad dressing. Notations were made with red pencil directly in the booklets at the time of interview. Each took about 10 min.

Calculation of Nutritive Values

The values of the dietaries were calculated for calories, protein, calcium, iron, vitamin A, thiamine, riboflavin, niacin, and ascorbic acid using the Babcock method (6). The dietary record plus interview was calculated first, and then the same dietary record disregarding the interview was calculated.

Comparison of Checked and Unchecked Dietary Records

The nutritive values of the dietaries with interview and without interview were compared individually and for the group as a whole on a percentage basis, using the values received for the checked records as the standard of comparison.

The values received for the records kept by the boys and by the girls were calculated separately as it was thought there might be a difference between the boys and the girls in their accuracy.

[1] Supported in part by NE-4 funds 9b2 and 9b3, obtained under the Research and Marketing Act. Received for publication November 1, 1950.

[2] 1940 census.

RESULTS

Percentage Difference for the Group

The comparison between checked and unchecked records for the boys and for the girls on a group basis is shown in Table 1. The checked records were either the same or very slightly higher than the unchecked records for every nutrient, but in no case was the difference greater than 10 per cent. The greatest difference occurred in ascorbic acid, being approximately 8 per cent for both the boys and girls. There was no appreciable difference in the accuracy of the record keeping between the boys and girls.

Percentage Differences for Individual Records

The range of the differences between the individual checked and unchecked records is shown in Table 2. Also shown is the number of checked and unchecked records whose calculated nutritive values differed from each other by 10 per cent or more. Individual records showed greater variation.

The nutrient values of the unchecked records for the boys ranged from a mean of 26.0 per cent below the checked records to a mean of 31.2 per cent above, while the values for the unchecked records of the girls were from 18.3 per cent below to 26.0 per cent above the checked records.

The mean number of checked and unchecked records whose calculated values for any nutrient differed by 10 per cent or more was 7.4 for the boys and 8.3 for the girls. Fifteen of the unchecked records for the boys showed variations of 10 per cent or more for vitamin A when compared with the checked records, while the unchecked records for sixteen of the girls varied 10 per cent or more from the checked records in regard to ascorbic acid intake.

TABLE 1

Comparison on a group basis of mean nutrient intake for checked and unchecked dietary records

NUTRIENT	CHECKED RECORD	UNCHECKED RECORD	DIFFERENCE*
Boys			
			%
Calories	2438	2376	2.6
Protein (gm.)	78.8	77.2	2.0
Calcium (mg.)	1097	1078	1.7
Iron (mg.)	13.9	13.6	2.2
Vitamin A (I.U.)	5205	5186	0.4
Thiamine (mg.)	1.41	1.38	2.1
Riboflavin (mg.)	1.99	1.97	1.0
Niacin (mg.)	13.8	13.4	2.9
Ascorbic acid (mg.)	50.8	47.0	7.5
Mean			2.5
Girls			
Calories	2082	2047	1.7
Protein (gm.)	65.5	65.4	0.2
Calcium (mg.)	925	911	1.5
Iron (mg.)	10.8	10.7	0.9
Vitamin A (I.U.)	4131	3889	5.9
Thiamine (mg.)	1.07	1.07	0.0
Riboflavin (mg.)	1.67	1.64	1.8
Niacin (mg.)	11.0	11.0	0.0
Ascorbic acid (mg.)	50.9	46.8	8.1
Mean			2.2

* The amount for which the nutrient value of the unchecked record was either below or above the checked record was calculated thus:

$$100 - \left(\frac{\text{nutrient value, unchecked record}}{\text{nutrient value, checked record}} \times 100\right).$$

DISCUSSION

From the results of this study, it would seem that the seven-day food record, kept after proper instruction, is as indicative of the nutrient intake of a group as is this same record after being checked with

TABLE 2

Percentage difference in calculated nutrient intake between checked and unchecked dietary records (individual basis)*

NUTRIENT	RANGE OF DIFFERENCE		NUMBER DIFFERING BY 10% OR MORE
	Below checked record value	Above checked record value	
Boys			
	%	%	
Calories	29.3	13.6	6
Protein	16.0	32.8	5
Calcium	21.9	24.0	5
Iron	20.0	35.8	5
Vitamin A	78.2	35.2	15
Thiamine	8.7	28.3	6
Riboflavin	24.8	21.6	6
Niacin	16.8	41.5	7
Ascorbic acid	17.1	48.0	12
Mean	26.0	31.2	7.4
Girls			
Calories	9.5	13.8	6
Protein	14.8	16.4	3
Calcium	30.6	25.6	10
Iron	18.8	25.7	8
Vitamin A	17.8	57.9	12
Thiamine	18.2	9.4	3
Riboflavin	23.1	16.1	8
Niacin	21.3	16.5	9
Ascorbic acid	10.4	52.4	16
Mean	18.3	26.0	8.3

* The amount for which the nutrient value of the unchecked record was either below or above the checked record was calculated thus:

$$100 - \left(\frac{\text{nutrient value, unchecked record}}{\text{nutrient value, checked record}} \times 100\right).$$

a nutritionist. However, 16 per cent of the subjects had unchecked records that deviated 10 per cent or more from the checked records. Consequently, when the nutrient intake of the individual is desired, it would seem wise to devote the brief time required to check the recorded food intake with the individual.

As might be expected, overestimation or underestimation of the size of servings of foods constituted the major cause of differences between the checked and unchecked individual dietary records. Many of the subjects failed to record at all such common items as bread and butter.

Differences in actual versus recorded caloric intake were found by the nutritionist when she asked if the foods eaten had been fried and whether butter or other spreads were used on the bread. Failure to record properly the amount and kind of meat and cereals eaten caused the greatest variation in the calculated intake of iron and niacin. The children often forgot to record between-meal milk or ice cream, cream sauces, the milk used on cereals, and to specify that cocoa was made with water rather than milk. The above items were the major causes of differences in the calcium and riboflavin content of the diets. Poor judgment as to the amount of butter or margarine eaten, or often failure even to record these foods made the unchecked figure for vitamin A in error. Variations between the checked and unchecked records in the intake of ascorbic acid were usually due to failure to indicate the size serving of fruit juices and the use of tomato sauces in prepared dishes.

SUMMARY

Seven-day dietary records were kept by forty-two boys and forty-five girls in the seventh and eighth grades. Each food record was then checked by a nutritionist in an interview with the subject. The nutritive values of the checked and unchecked dietaries were calculated for nine nutrients.

As a group, the unchecked dietaries gave no differences greater than 10 per cent of the checked records for the nutrients calculated.

On an individual basis, for 16 per cent of the subjects, discrepancies were noted which amounted to 10 per cent or more between the values for the checked and unchecked records. Some causes of these discrepancies are discussed.

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BIOGRAPHICAL NOTES FROM THE HISTORY OF NUTRITION

Philipp Biedert—November 25, 1847—September 20, 1916

Scientific feeding of infants was inaugurated less than a hundred years ago. The leader in bringing about this new approach to infant feeding was Philipp Biedert, born November 25, 1847, in Niederflorsheim in Rheinhessen near Frankfurt. Biedert graduated from the University of Giessen and also studied at the Universities of Wurzberg and of Vienna. His dissertation for his medical degree was on the chemical difference between human milk and cow's milk, and this investigation appears to have laid the foundation for his continued interest and research in infant feeding. This study was first published in 1869, with a second edition in 1884.

In the Franco-Prussian War, Biedert volunteered as a medical officer and remained with the Army until 1877. He was head physician at the City Hospital at Hagenaŭ in Alsace.

In 1879, Biedert described the condition in infants known as "fat diarrhea," and in 1880 he published the first important work of its kind on infant nutrition. In this book, which ran to a fifth edition in 1905, he gave a minute classification of gastrointestinal diseases in infants. Many publications on infant feeding, the physical and mental care of children, and children's disease came from Biedert's pen. He introduced fermented milk for children and maintained that the casein of cow's milk was less digestible than that of human milk. Biedert introduced a series of graduated mixtures of cream, cow's milk, water, and sugar for use in infant feeding.

Biedert was one of the founders of the German Society of Pediatrics in 1883. He died on September 20, 1916.

Reference: F. H. Garrison in *A System of Pediatrics*, Vol. I. Edited by I. A. Abt. Philadelphia: W. B. Saunders Co., 1922, p. 95.

—Contributed by E. Neige Todhunter, Ph.D., Head, Department of Food and Nutrition, University of Alabama, Tuscaloosa.

Hemoglobin Values, Plasma Vitamin A and Carotene Levels in Young Women on Institutional Diets[1]

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WIDE variation in both hemoglobin values and plasma vitamin A and carotene levels in human beings have been found by recent investigators, and more data are needed before "normal values" can be established. The present study was conducted for the purpose of determining the hemoglobin values and plasma levels of vitamin A and carotene in the blood of a group of young women in a normal state of health as judged by a physician.

Forty-four young women attending All Saints College, Vicksburg, Mississippi, during the spring semester of 1949 were the subjects. Thirty-one were from 15 to 17 years of age, 9 were 18 years old, and 4 were from 19 to 22 years of age. With the exception of three girls who lived at home, the subjects ate all meals in the dining hall.

EXPERIMENTAL PROCEDURE

In making this investigation, the following methods of collecting data were used:

(a) Calculations of the food intake from a dietary record sheet kept by each subject. The record was in terms of household measures of all food eaten in one week. Weights in grams for calculation were obtained by weighing average servings of the foods received in the dining hall. Total calories, milligrams of iron, and vitamin A values were calculated from *Tables of Food Composition* (1) and Bowes and Church (2). From the total values, the average daily intakes of calories, iron, and vitamin A were determined.

(b) Analyses of a sample of fasting blood for hemoglobin content and plasma content of carotene and vitamin A were made. Venous blood was taken from the forearm of each subject before breakfast, approximately an hour after rising. Heller and Paul's mixture was used as the anti-coagulant. Immediately after the blood was drawn, the tubes for hemoglobin determinations were prepared, and the remaining blood was refrigerated. After the hemoglobin values were determined, the blood was centrifuged, and the plasma was removed.

The hemoglobin values were determined by the acid-hematin method with the use of a Fisher electrohemometer. A 0.02-ml. sample of blood was diluted with 5 ml. of 0.1 N hydrochloric acid in the diluting pipette provided for the instrument. Duplicate readings were made for each subject, and the average was recorded.

The carotene and vitamin A values of the plasma were determined by the Kimble (3) method using the Evelyn photoelectric colorimeter. The blood plasma was extracted with alcohol and petroleum ether. The pigments other than carotene were dissolved in the alcohol, while the carotene and vitamin A went into the ether layer. The yellow color of the carotene in the ether was read with filter 440 in the colorimeter. The vitamin A value was then determined by the Carr-Price reaction, after evaporating the ether, and dissolving the residue in chloroform. Filter 620 was used in reading the blue color which developed on the addition of antimony trichloride.

The concentrations of carotene and vitamin A were determined from semi-logarithmic curves made by plotting known concentrations against transmittance readings on the instrument used. In determining the vitamin A, correction was made for the carotene which also gave a characteristic blue color with antimony trichloride. Both carotene and vitamin A values were expressed in micrograms per 100 ml. plasma.

(c) Examination of the subjects for certain symptoms usually associated with vitamin A deficiency was done by a physician. The symptoms included: conjunctival thickening, follicular conjunctivitis, Bitot spots, dermatosis follicularis, permanent gooseflesh, scaliness, and pigmentation. The age, height,

[1] Presented by Margaret Haworth in partial fulfillment of the requirements for the degree of Master of Science in foods and nutrition.

weight, and history of respiratory diseases of each subject were recorded.

RESULTS AND DISCUSSION

Dietary Analyses

In Table 1 is shown the caloric intake of the subjects as compared to the recommended allowance of the National Research Council (4). None of the fifteen-year-old girls received the recommended allowance of calories; two of the subjects had as much as 75 per cent of the recommended allowance, and one had less than 50 per cent. Of the 38 young women, ages 16 to 20 years, 5 received the recommended allowance of calories and 27 had at least 75 per cent of the allowance. Of the two subjects over 20 years of age, 1 received the recommended allowance of calories and the other received 75 per cent of the allowance. Although 38 out of 44, or 86 per cent, of the subjects received less than the daily recommended allowance of calories, only 10, or 23 per cent, could be regarded as underweight according to the standards of Baldwin and Wood (5). These results were in agreement with those of Youmans and coworkers (6) and of Ferguson and McHenry (7) who found little relationship between caloric intake and body weight.

In Table 2 the comparison of the daily iron intake with the recommended intake of the National Research Council is given. Fifteen mg. iron per day is the allowance for young women 15 to 20 years of age (4). The National Research Council (4) stated that no data were available for the requirement during adolescence and its recommendations for this age group were estimated on the assumption that their needs are greater than those of the adult. For the adult woman, the recommended allowance per day was 12 mg. iron which included a 50 per cent margin of safety. Ten mg. would, therefore, be considered sufficient for a normal young woman, if no allowance were made for emergencies and undue loss of blood. Leverton and Marsh (8) showed that an average intake of 10.44 mg. iron per day was sufficient for the daily body requirement and replacement of menstrual losses. Assuming tentatively an absorption of 11 to 12.5 per cent iron, Frenchman and Johnston (9) suggested that an intake of 10 to 11 mg. was sufficient for women. Since the iron requirement of adolescent girls depends largely on the menstrual loss, many girls would not need as much as 12 to 15 mg. and an occasional girl might need more.

Nine per cent of the subjects in the present study had an intake of 15 mg. iron per day; 16 per cent, an intake between 12 and 15 mg.; 41 per cent, an intake of between 10 and 12 mg.; and 34 per cent, an intake of less than 10 mg Two-thirds of the subjects received at least 10 mg. iron daily.

The vitamin A intake recommended by the National Research Council is 5000 I.U. per day (4). This allowance is based on the assumption that two-thirds of the vitamin A intake is obtained from carotene (4). As shown in Table 2, 55 per cent of the subjects consumed at least 5000 I.U. vitamin A per day, 27 per cent consumed from 3300 to 5000 I.U., and 18 per cent consumed less than 3300 I.U. According to these figures, a majority of the subjects showed an adequate intake of vitamin A.

Blood Analyses

The mean hemoglobin value was 13.58 ± 0.46 gm. per 100 ml. blood. The mean value found in the present study was higher than the means found by Everett (10), 13.16 gm.; Myers and Eddy (11), 13.10 gm.; Leichsenring *et al.* (12), 12.08 to 12.58 gm.; Sheets and Barrentine (13), 12.4 ± .338 gm.; Ohlson *et al.* (14), 13.4 gm.; Abbott and co-workers, (15), 10.58 to 11.74 gm.; and Milam and Muench (16), 13.08 ± .911 gm. The mean hemoglobin of the group, 13.58 gm., was lower than the range of the means, 13.69 to 14.79 gm. per 100 ml. recorded for young women by Osgood and Haskins (17), Wintrobe (18), Bethell (19), Mugrage and Andresen (20), Wiehl (21), and McAllister and Molsberry (22). As shown in Table 3, the hemoglobin values for the subjects ranged from 11.6 to 16.3 gm. per 100 ml. of blood. Osgood (23) reported values of from 11.5 to

TABLE 1

Caloric intake of 44 young women compared with the Recommended Dietary Allowance (4)

AGE OF SUBJECTS	RECOMMENDED ALLOWANCE	NUMBER OF WOMEN			
		Caloric intake equal to allowance	Caloric intake 75% of allowance or above	Caloric intake 50 to 75 % of allowance	Caloric intake less than 50% of allowance
years					
13–15	2600	0	2	1	1
16–20	2400	5	27	10	1
20–22	2400	1	2	0	0

TABLE 2

Iron and vitamin A intakes of 44 young women

INTAKE	SUBJECTS	
	Number	Percentage
Iron		
15 mg. and above	4	9
12 to 14.9 mg.	7	16
10 to 11.9 mg.	18	41
Less than 10 mg.	15	34
Vitamin A		
5000 I.U. and above	24	55
3300 to 4999 I.U.	12	27
Less than 3300 I.U.	8	18

TABLE 3

Mean and range of hemoglobin, plasma vitamin A, and plasma carotene values

MEASUREMENT MADE	NUMBER OF SUBJECTS	MEAN AND STANDARD DEVIATION	RANGE
Hemoglobin (gm./100 ml.)	44	13.58 ± 0.46	11.6 – 16.3
Plasma carotene (mcg./100 ml.)	40	120.58 ± 34.18	48.7 –201.7
Plasma vitamin A (mcg./100 ml.)	39	54.96 ± 21.93	7.54– 94.2

16 gm. per 100 ml. to be the normal range of hemoglobin values for girls, ages 14 years and older.

The hemoglobin values are presented in Table 4 according to age groups, since age has been shown to affect hemoglobin values (24). The mean values varied directly with the age levels, although the variation was slight among the several groups. The average value for girls 15 years old was 13.42; 16 years, 13.48; 17 years, 13.54; and 18 to 22 years, 13.7.

In Figure 1 is shown the percentage distribution of the hemoglobin values. Approximately 36 per cent of the values were 14 gm. or above. Fifty per cent of the values were at or above 13.8 gm., which was the level recommended by Osgood (23) for girls 14 years and older. Ninety-eight per cent of the values were above 12 gm., and no value was low enough to indicate anemia. As shown previously, two-thirds of the subjects were consuming at least 10 mg. iron per day.

Of the forty-four young women studied, carotene values were obtained for forty-one. Forty of these values ranged from 48.7 to 201.7 mcg. per 100 ml. plasma as shown in Table 3. The remaining value, 343.5 mcg., was omitted in determining the mean with its standard deviation. In Figure 2 is shown the percentage distribution of carotene values of the young women. The greatest number of values, approximately 38 per cent, were within the range of 100 to 125 mcg. per 100 ml. plasma.

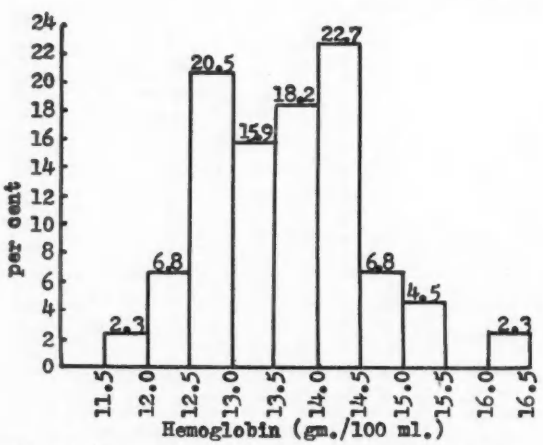

FIG. 1. *Percentage distribution of hemoglobin values.*

TABLE 4

Average hemoglobin values according to age groups

AGE OF SUBJECTS	NUMBER OF SUBJECTS	HEMOGLOBIN	
		Average	Range
years		*gm./100 ml.*	*gm./100 ml.*
15	4	13.42	11.6–15.00
16	16	13.48	12.2–16.30
17	11	13.54	12.0–14.70
18–22	13	13.70	12.7–15.00

The mean carotene value was 120.58 ± 34.18 mcg. per 100 ml. The means found by other investigators ranged from 81 to 320 mcg. (25, 26). Although the mean carotene value for the subjects of the present study was lower than the means found by Kimble (3), Yarbrough and Dann (27), Murrill *et al.* (28), Highman (29), and Kirk and Chieffi (26), 98 per cent of the values were at or above 75 mcg. Values below 75 mcg. are considered low by most workers (30). Only 5 per cent of the values were above 200 mcg. which is considered "excellent" (30).

The plasma vitamin A levels ranged from 7.54 to 94.2 mcg. per 100 ml. of plasma, with a mean of 54.96 ± 21.93 (Table 3). These values were somewhat higher than those found by Chevallier and Manuel (31), Kirk and Chieffi (26), and Popper and Steigmann (25).

Since the results of many early studies were reported in International Units, the microgram values found in the present study were converted to this measure for purposes of comparison. Crystalline vitamin A alcohol[2] was used as the standard in the preparation of the calibration curve for calculation of vitamin A. This product had a biologic potency of 3,000,000 U.S.P. XII units per gram or 3 U.S.P. XII units per microgram. The U.S.P. units are interchangeable with I.U. The range of values, therefore, was 22.6 to 282.6 I.U. vitamin A per 100 ml. plasma. The mean was 164.88 ± 65.79 I.U., which was higher than the means reported by Kimble (3),

[2] Supplied by General Biochemicals, Chagrin Falls, Ohio.

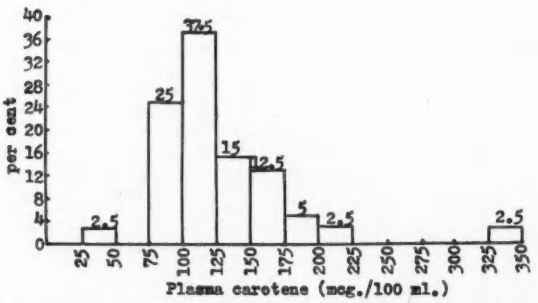

FIG. 2. *Percentage distribution of plasma carotene values.*

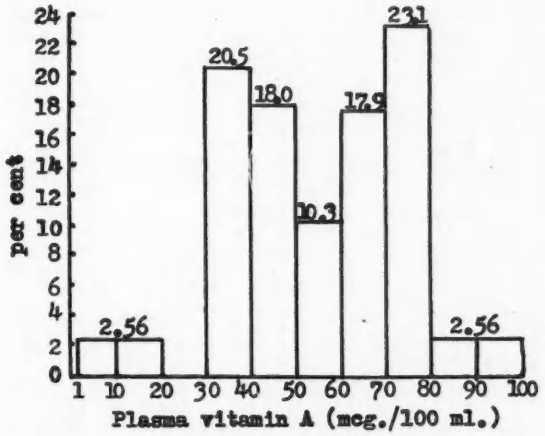

FIG. 3. *Percentage distribution of plasma vitamin A values.*

Yarbrough and Dann (27), Murrill *et al.* (28), Yudkin (32), and Highman (29).

Hartzler (33) has shown that 3500 I.U. vitamin A per day was sufficient to maintain plasma vitamin A levels of 100 to 110 I.U. per 100 ml. plasma. The dietary analyses in the present study showed that approximately 82 per cent of the young women were consuming at least 3300 I.U. vitamin A daily. In Figure 3 it is evident that 74 per cent of the subjects had plasma values at or above 40 mcg. or 120 I.U. per 100 ml.

Ninety-five per cent of the subjects had vitamin A levels at or above 20 mcg. Values below 20 mcg. are considered low by most workers (30). Fifty-six per cent of the values in this study were above 50 mcg., which is considered "excellent" (30).

Clinical Examination

In the present study, few of the symptoms that were generally associated with vitamin A deficiency were found, and no relationship was found between plasma vitamin A levels and deficiency symptoms. One subject whose plasma vitamin A level was 94.18 mcg. per 100 ml. had scaliness on the arms and legs. Of two subjects who had a slight dermatosis follicularis, one had a plasma vitamin A level of 65.04 mcg. per 100 ml., and the other, a level of 48 mcg.

SUMMARY

A study was conducted on forty-four young women, ages fifteen to twenty-two years, to determine normal blood values of hemoglobin, vitamin A, and carotene.

Analysis of the dietary records showed that the average daily caloric intake ranged from 1117 to 3084. Approximately three-fourths of the subjects had 75 per cent or above of the recommended allowance of calories. Although 86 per cent of the subjects consumed less than the recommended allowance of calories, only 23 per cent could be regarded as underweight.

Two-thirds of the subjects consumed at least 10 mg. iron per day. The average daily intakes ranged from 5.8 to 17.9 mg.

Fifty-five per cent of the subjects consumed at least 5000 I.U. vitamin A daily which is the recommended allowance of the National Research Council. Eighty-two per cent had a daily intake of at least 3300 I.U.

The mean hemoglobin value was 13.58 ± 0.46 gm. Ninety-eight per cent of the values were 12 gm. or above, and no value was low enough to indicate anemia. The values ranged from 11.6 to 16.3 gm. per 100 ml. Fifty per cent of the values were 13.8 gm. or above, which was the level recommended by Osgood (23).

The mean plasma carotene value, 120.58 ± 34.18 mcg. per 100 ml., was lower than those found by certain other investigators. Values in this study ranged from 48.72 to 343.5 mcg. per 100 ml. Ninety-eight per cent of the subjects had plasma carotene values of 75 mcg. or above, but only 5 per cent had values above 200 mcg.

The mean plasma vitamin A value of 54.96 ± 21.93 mcg. per 100 ml. was higher than the means found by other investigators, when reported in either micrograms or International Units. The plasma vitamin A values ranged from 7.54 to 94.2 mcg. per 100 ml. Ninety-five per cent of the values were 20 mcg. or above, and 56 per cent were above 50 mcg.

Few of the symptoms usually associated with vitamin A deficiency were found, and there seemed to be no relationship between such symptoms and plasma vitamin A levels.

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The Cold Coffee Problem

At the Wilmington (Delaware) General Hospital, a trustee instigated a survey of the coffee service. It is generally agreed that the goal would be to serve coffee at 70°C. at the bedside after cream has been added. At the Wilmington Hospital, the following figures highlight the problem of achieving this target.

Before the patient ever sips coffee served in a *preheated* china pot, poured into a room-temperature cup, and to which cream is added, there is a loss of 38°C. Assuming that the coffee originally had a temperature of 80 or 85°C., as served, it would be about 45°C., which can rightly be termed "cold." If longer than 17 min. has elapsed between the urn and the cup, the coffee may be even colder.

It was found that the time lag between urn and service is the most important factor in coffee cooling. It was estimated that it would be barely possible by adopting a first on–first off unloading principle to serve coffee 13 min. after it is poured from the urn. Even with this most optimistic performance, there would be a heat loss of about 20°C. If to this is added the combined loss of 13°C from a cold cup and cream, the total loss to combat would be 33°C.—not including the loss which occurs while the coffee stands before the patient drinks it.

Thus, if 70°C. coffee is the goal, it should leave the urn at 103°C. (or 98°C. at the lowest) and have absolutely no time delay.

Because of practical difficulties in timing, the following recommendations were made:

(a) Discard china coffee *pots*.

(b) Use the equipment instead for preheating coffee *cups*.

(c) Provide vacuum jugs to be filled with 98°C. liquids, which can be poured into preheated cups in the presence of patients.—*Abstracted from The Modern Hospital 27: 89 (August), 1951.*

Ascorbic Acid and Carotene in Fresh and Stored Celery[1]

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MOST celery is used when fresh or after short periods of storage. Longer storage periods, however, are used to make northern-grown celery—which must compete with fresh celery grown in Florida, California, and other warm areas—available during winter months. In recent years green celery has become increasingly popular in preference to the white or blanched celery.

It was of interest in this laboratory to study the ascorbic acid and carotene content of different varieties or strains of celery grown under the same conditions and of celery that had been held in storage for periods comparable to celery purchased on the market.

In this study ascorbic acid and carotene content were determined in fresh celery of different varieties or strains after one, two, and three weeks of refrigerated storage and after two months of pit storage.

EXPERIMENTAL PROCEDURE

Three varieties—green unblanched Utah, green unblanched Pascal, and yellow self-blanching Cornell celery—were used for this study during four different growing seasons. Different strains of the Utah variety were also studied. Variety #15 was used for Series I, II, III, and IV (representing the four seasons), while only one series of tests was made for Utah or Golden Crisp, Utah Pollard selection #1, Utah Pollard selection #12, and Tall Utah 52-10.

The celery was grown by the Department of Vegetable Crops at Farmington and American Fork, Utah. It was harvested in prime condition and brought to Logan where all fresh samples were analyzed after overnight refrigeration. The stored celery was analyzed after one, two, and three weeks of storage in a refrigerator at a mean temperature of 40°F. All stalks were wrapped in burlap which was moistened daily during the storage period.

The outer petioles of the celery in Series I were cooked at each test period and triplicate samples were analyzed for ascorbic acid. Lots of 250 gm. each were boiled in 150 ml. distilled water in a covered Pyrex pan for 12 min.

Determinations were also made on one lot of Utah celery after a storage period of two months in a trench.

Fresh Utah celery grown on soil receiving different fertilizer treatments was also analyzed for ascorbic acid. It was grown on plots replicated four times, each replication receiving respectively no fertilizer, 250, 500, or 750 lb. ammonium sulphate to the acre.

Ascorbic acid values were determined by the method of Loeffler and Ponting (1) and the carotene by the method adapted from the procedure of Moore and Ely (2).[2]

Each stalk of celery was separated for analysis into outside petioles, outside leaves, inside petioles, and inside leaves except for the celery in Series I in which the inside petioles and inner leaves were mixed. The leaves were carefully separated from the petioles. Four or five stalks of celery were used in making each sample.

RESULTS AND DISCUSSION

The ascorbic acid values for the different strains of Utah celery ranged from 7.8 to 11.1 mg. per 100 gm. for the outside petioles (Table 1). Differences between the values for the three varieties—Utah, Cornell, and Pascal celery—were within a similar range (6.8 to 11.1 mg. ascorbic acid per 100 gm.). No one strain of Utah celery was markedly higher than the other strains or varieties. The variation in ascorbic

[1] Received for publication September 29, 1950.

[2] Changes in carotene method from the original procedure of Moore and Ely (2), were as follows: After blending the sample in the Blendor, the mixture is filtered in a sintered-glass funnel. The residue was washed with approximately 25 ml. alcohol and Skellysolve four times. The carotene was separated from the other pigments by passing the extract through a column of powdered magnesia (1 part) and Hy-flo super cell (3 parts by weight). The carotene was eluted by using Skellysolve containing 3 per cent acetone.

TABLE 1

Ascorbic acid and carotene content of three varieties of fresh celery

VARIETY	OUTSIDE PETIOLES	INSIDE PETIOLES	INSIDE LEAVES	OUTSIDE LEAVES
Ascorbic Acid				
	mg./100 gm.	*mg./100 gm.*	*mg./100 gm.*	*mg./100 gm.*
Utah				
Variety #15				
Series I	11.1	21.6*	*	108.7†
Series II	11.1	13.2	50.2	65.4
Series III	10.6	11.9	52.2	38.7
Series IV‡	9.1	8.8	34.6	35.0
Utah or Golden Crisp‡	10.3	9.2	35.7	48.5
Utah Pollard selection #1‡	7.8	8.0	31.5	38.1
Utah Pollard selection #2‡	8.4	8.8	35.7	48.5
Tall Utah 52-10 B‡	8.5	8.8	34.0	38.6
Cornell				
Series I	8.8	15.9*	*	40.3
Series II	10.3	11.0	40.9	50.8
Series IV‡	8.6	7.7	26.7	31.9
Giant Pascal				
Series II	9.4	12.8	39.1	53.5
Series IV‡	6.8	7.7	38.6	25.9
Carotene				
Utah				
Variety #15				
Series II	.115	.062	1.220	5.361
Series III	.130	.022	.576	5.080
Series IV‡	.110	.048	.583	4.910
Utah or Golden Crisp‡	.107	.032	.928	3.895
Utah Pollard selection #1‡	.126	.043	.847	7.161
Utah Pollard selection #2‡	.161	.052	1.135	5.990
Tall Utah 52-10 B‡	.114	.034	.605	4.343
Cornell				
Series II	.021	.023	1.300	4.114
Series IV‡	—	.049	—	—
Giant Pascal				
Series II	.118	.075	.749	5.039
Series IV‡	.119	.044	1.369	—

* Inner petioles and leaves were combined for analyses.
† Leaves not trimmed as closely as in other series.
‡ Celery was held 48 hr. instead of 24 hr. before analyses.

acid content from season to season for the same variety was only slightly less than that between strains or varieties.

The inside petioles plus inner leaves or hearts of fresh celery in Series I contained twice as much ascorbic acid as did the outer petioles and approximately one-third to one-half as much as did the outer leaves. The outside leaves of Utah celery in this series had the highest content of ascorbic acid of any series. However, this celery had not been trimmed as closely when harvested as the rest of the celery. In Series II, the waste leaves and stalks, which are ordinarily left in the field when harvested, were analyzed separately. The ascorbic acid content of the waste leaves was 78.2 mg. per 100 gm. for Utah, 48.9 mg. for Cornell, and 49.1 mg. for Pascal celery. The values for the waste petioles were 10.2, 9.6, and 7.8 mg. respectively for the three varieties.

The inside leaves of the fresh celery in Series II contained 75 to 80 per cent, the inside petioles 20 to 24 per cent, and the outside petioles 17 to 20 per cent as much ascorbic acid as the outside leaves, depending on the variety. In Series III, the inner leaves were highest in ascorbic acid content. The fact that the outer leaves were in poor condition and had been trimmed off more closely probably accounted for their lower values. The inside leaves, however, compared closely in ascorbic acid values to those of the other series of the same variety. In Series IV, the outer leaves were again the highest.

There was little difference in carotene content of the fresh celery of the Utah and Pascal varieties. The outside leaves were highest in carotene and the inside petioles lowest. The carotene content of the leaves was less affected by quality than was the ascorbic acid value. The leaves were much better sources of carotene than the petioles, the values for the inside leaves being five to ten times and for the outside leaves forty to fifty times the values for the outside petioles. The inside petioles contained less than half the amount found in the outside petioles of the Utah and Pascal varieties. Low carotene values were obtained for both the outside and inside petioles of Cornell celery. The strains of Utah Pollard selection #1 and selection #2 had the highest values for carotene content of outer petioles and outer leaves. The waste petioles of celery in Series II were analyzed for carotene content and were found to be equal in value to the outside petioles.

Carotene values reported by Owens *et al.* (3) for other varieties of celery did not vary greatly from those obtained in this study. They found that the edible stalks of Fordhook Emperor, Easy Blanching, and Tall Fordhook varieties contained 0.18, 0.15, and 0.15 mg. carotene per 100 gm. while the leaves contained 6.90, 6.74, and 4.56 mg., respectively. Carotene values in this study for the different strains of Utah celery fell within a range of 0.11 to 0.16 mg. for the stalks and a range of 3.89 to 7.16 mg. for the outside leaves (Table 1).

In addition, a study was made of the effect of fertilizer treatment and of cooking on the ascorbic acid content of celery in Series I. The fertilizer did not seem to affect the ascorbic acid content.

The retention of ascorbic acid in celery during cooking was 78 to 87 per cent in the solid portion, which was higher than the 50 per cent retention reported by Osterman (4).

TABLE 2

Ascorbic acid and carotene content of stored celery

VARIETY	STORAGE PERIOD	OUTSIDE PETIOLES	INSIDE PETIOLES	INSIDE LEAVES	OUTSIDE LEAVES
		Ascorbic Acid			
		mg./100 gm.	*mg./100 gm.*	*mg./100 gm.*	*mg./100 gm.*
Utah					
Temporary storage					
Series I	1 week	12.6	25.4*	*	57.7
	2 weeks	11.7	26.1*	*	43.2
	3 weeks	9.6	23.4*	*	61.7
Series II	1 week	8.8	12.4	47.9	47.2
	2 weeks	6.9	9.3	42.9	36.0
	3 weeks	8.4	12.9	43.8	34.5
Trench storage	not stored	13.5	26.5*	*	105.0
	2 months	6.2	9.8*	*	49.7
Cornell					
Series I	1 week	7.1	17.3*	*	35.0
	2 weeks	8.6	19.7*	*	44.3
	3 weeks	4.9	12.4*	*	21.0
Series II	1 week	9.1	12.3	38.8	38.5
	2 weeks	8.8	11.0	39.9	36.8
	3 weeks	7.2	13.4	38.7	35.4
		Carotene			
Utah					
Series II	1 week	.124	.039	1.280	5.755
	2 weeks	.110	.050	1.900	5.855
	3 weeks	.104	.039	.918	4.175

* Inner petioles and leaves were combined for analyses.

Only a slight change in ascorbic acid content occurred in the celery that had been stored two weeks at 40°F. (Table 2), but a decrease in vitamin content resulted during the third week of storage in most samples. When the quality of the stored celery was above average, the vitamin values did not decrease as much. The loss in ascorbic acid in the petioles calculated on the moist basis was 13 to 44 per cent in Series I and II for the two varieties.

The ascorbic acid values for green Utah celery which had been purchased on the open market as reported by Osterman (4) ranged from 4.3 to 6.8 mg. per 100 gm. for the outer stalks. These values are below those obtained in this study for either the fresh or stored Utah celery (9.6 mg. for fresh and 8.4 mg. after three weeks' storage).

The ascorbic acid content of Utah celery in Series I decreased by more than 50 per cent during two months' storage in a trench. This celery was of good quality and was crisp and flavorful at the end of the storage period.

The carotene content of stored celery of the Utah variety in Series II showed a slight change during the three weeks' storage period, varying from 60 per cent retention in the inside petioles to 80 per cent in the outside petioles (Table 2).

SUMMARY

In four series of celery analyzed for ascorbic acid content, little variation between varieties and strains was found. The outside leaves of each variety had the highest ascorbic acid values followed by the inside leaves, and then the inside or outside petioles.

A decrease in ascorbic acid content occurred during storage in all four varieties. The ascorbic acid values of Utah celery decreased by more than 50 per cent during two months' storage in a trench.

The carotene content of fresh Utah and Pascal celery did not show much variation, but the outside petioles of Cornell celery were much lower than for other parts of this variety or all parts of Utah celery. The outside leaves of each variety were the highest in carotene content, followed by the inside leaves, outside petioles, and the inside petioles, respectively.

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Research Grant to Aid Nutrition in Latin America

In 1950–51, the National Vitamin Foundation provided a grant-in-aid to Dr. Nevin S. Scrimshaw, Pan American Sanitary Bureau, Institute of Nutrition of Central America and Panama, Guatemala City, for the study of the effectiveness of vegetable protein supplements by synthetic vitamin B_{12} in the growth and development of undernourished children.

One of the principal problems facing the health departments of Central American countries is the prevalence of protein deficiency, especially due to lack of good quality protein in the diets of the people, and the high incidence of frank protein deficiencies in infants and children of the vast numbers of poor families. Efforts to supply this protein through milk, meat, and eggs run into serious economic obstacles which cannot be overcome for many years.

If it can be shown that vegetable protein can be made as effective as animal protein for the growth and development of infants and children, by the addition of a specific chemical substance like vitamin B_{12}, it will be of vast importance all over the world.

Dietary Study Methods

IV. The Dietary History for Use in Diet Therapy[1]

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Assistant Director of Dietetics, University Hospital, Ann Arbor, Michigan

ONE of the most important factors in effective dietary instruction is a good dietary history. When it becomes necessary to impose a change of diet on a patient for therapeutic reasons, the doctor or the dietitian is faced with the problem of helping the patient adjust to the desired regimen.

It is well recognized that the human being is a creature of habit and that innumerable forces have been operative in the formation of these habits. Anyone who has tried to change a habit is well aware of the difficulties involved. Food habits are no exception.

The more information one can obtain relative to the patient's cultural background, occupation, religion, economic status, the number of people in the family unit, and so on, the more practical the dietary program which can be planned for that person. This is where a dietary history is extremely essential. Time, however, is a more or less limiting factor in obtaining detailed information in a busy hospital, clinic, or doctor's office.

Much of the desired information can be obtained by allowing the patient to tell something of his problem, and then trying to obtain additional data through leading questions. Most patients divulge these details readily if made to feel at ease.

The forms on which dietary histories are taken are legion. Each institution uses one that seems to meet its needs. The following is a discussion of the items and questions which might be included in such a form.

[1] This paper was prepared for The American Dietetic Association with the consultation of the Committee on Dietary Study Methods—Elmira Blecha, Bertha S. Burke, Ercel S. Eppright, Ph.D., Helen A. Hunscher, Ph.D., Miriam E. Lowenberg, Ph.D., Thelma Porter, Ph.D., Charlotte M. Young, Ph.D., and Icie Macy Hoobler, Ph.D., Sc.D., Chairman. It was first presented at the Panel Discussion on Dietary Study Methodology held during the 33rd Annual Meeting of The American Dietetic Association in Washington, D. C., on October 17, 1950.

GENERAL INFORMATION

The address may be an important factor, should it happen to be a trailer site with no baking facilities, when it seems desirable for the patient to have wheat-free bread.

Some idea regarding the diagnosis is necessary. It is often helpful to hear the patient's version which can be used as "a stepping stone" in explaining the rationale of the diet to him. It is absolutely essential that the patient have an understanding of the benefits to be expected from the diet, if he is to feel that the result will be worth the sacrifices he is about to make. Any change in a patient's food habits is, in some measure, a sacrifice to him, regardless of the therapeutic merits.

The weight of an individual is of real value in determining whether his caloric intake is adequate. There is a tendency, be it conscious or unconscious, for the obese patient to minimize his sample day's intake, and the converse is apparent in the underweight person. This may be in a qualitative rather than a quantitative sense, and it would behoove the investigator to search for "hidden calories," such as fried foods, gravies, salad dressing, cocktails, and candy. In the event of a rapid weight gain, the possibility of edema should be considered. Answers to the following questions help one to evaluate the weight history: What is the patient's average weight? How long has it been the same? What is the range of variation in the past year? To what does the patient attribute a rapid gain or loss of weight? If to a diet, what was the nature of that diet?

The type of occupation, hours of work, straight or split shifts, place where meals are eaten, and amount of time allowed for meals all have bearing on what the patient eats.

QUESTIONS REGARDING FOOD INTAKE

The following questions are pertinent regarding sample daily intake:

Breakfast

Fruit: What kind? How often? Is sugar used on fresh fruit?
Cereal: What kind? Cream and sugar? How much?
Breadstuffs: What kind? How many servings? Butter?
Jam or marmalade?
Gravy?
Bacon?
Eggs? How prepared?
Pancakes? Size? Number? Butter? Sirup?
Beverage: Kind? Amount of cream and sugar? Number of cups?

Noon meal or supper. (This is usually a "pick-up" meal using leftovers or foods easily prepared. Try to determine whether fruits, vegetables, milk, and meat or a substitute are regularly included.)

Time? At home? School? Downtown?

Evening meal. This is likely to be the "dinner."

Soup: Clear or cream?
Crackers: How many? Butter?
Meat: What kinds? How prepared?
Potato or substitute: Number of servings? Gravy? Butter?
Vegetables: Raw—kinds? Salad dressing (oil or "boiled dressing")?
Bread: Servings? Butter? Jelly or jam?
Desserts: What kind? How often?
Beverage: Kind? Amount of cream and sugar? Number of cups?

Extras

Habitually or occasionally? These include afternoon tea, evening lunches, fruit, candy, malted milks, soft drinks, beer, wine, and so on.

VALUE OF SAMPLE DAY'S INTAKE

One of the values of obtaining a sample daily food intake is that it may show a long established pattern of meals for that patient. Since the therapeutic aspect of the diet is usually a variation of the normal diet, it is feasible to expect better cooperation by the patient if the meal pattern can at least follow its established lines.

A weekly food summary can be used as a cross check on the food intake. It is entirely possible for meat to appear twice on the sample day's intake only to find, by way of cross check, that the patient averages only three servings of meat or alternate per week. For milk, breads, and fats, it is usually possible to obtain an average daily estimate whereas, for the other items, the number of servings per week seems easier.

It is well to note foods which are regularly omitted and reasons for the omissions, so that they may be considered when instructing the patient. The food summary can then be compared with the Basic Seven or a similar "rule of the thumb" for estimation of adequacy.

One of the most fundamental points of the dietary history is the question, "Is income adequate for a special diet?" The patient's economic status *must* be considered in planning the diet. Unless the food can be purchased, prepared, and eaten, the most attractive dietary plan on paper is of no avail.

During the process of obtaining the dietary history, the interrogator will form some opinion of the patient's intelligence and can then gear the instruction to a likely level.

Because of difficulties involved in recalling amounts of food used, changes in diet due to seasonal availabilities, occasional meals away from the usual routine, and snacks, the dietary history is inadequate for quantitative evaluations as used for research purposes. On the other hand, the dietary history described above serves a useful purpose as an integral forerunner of every dietary instruction.

WHO Nutrition Program

Functions of the World Health Organization nutrition program can be divided into two categories, stated Dr. F. W. Clements, Chief of WHO's Nutrition Section, in the July issue of the *Journal of the American Medical Women's Association* (6: 258, 1951). The first is to render assistance to governments at their request. Help in administration, educational programs, and research is given to governments wishing to establish national nutritional services.

The second function of the WHO nutrition program is to serve as the leader in stimulating interest and work in nutritional problems related to health and disease. Present topics of attention are: infant feeding problems in underdeveloped countries; endemic goiter; and assessment of nutritional status.

Kwashiorkor, also known as malignant malnutrition, was discovered to be a factor in the high post-weaning mortality in Africa, Asia, and South America. Attention was drawn to this disease at the first session of the FAO-WHO Expert Committee on Nutrition at Geneva in 1949, and experts were sent to study kwashiorkor in Africa. Skim milk appears at present to be the most satisfactory treatment, since no milk other than human is available in many areas. WHO and FAO are now planning a joint mission to Central and South America, where they will work with local experts in collecting data and organizing regional seminars.

WHO has also helped a number of countries to develop surveys of the incidence of endemic goiter. In some areas ordinary free-flowing iodized salt is not available and customs do not permit its use. WHO is now stimulating laboratory studies to find a way to iodize crude salt which will be suitable for the primitive methods of processing used in most underdeveloped countries.

Bradford Bachrach photo.

MARGARET A. OHLSON, Ph.D.
PRESIDENT OF THE AMERICAN DIETETIC ASSOCIATION

Editorial

MARGARET A. OHLSON PRESIDENT OF THE AMERICAN DIETETIC ASSOCIATION

The new President, Margaret A. Ohlson, brings to the Association real ability, wide professional experience, and a keen interest in and appreciation of The American Dietetic Association.

She was born in Chicago and when a small child moved to Seattle with her family. For a number of years her father, Anton Ohlson, was associated with the telephone company in Seattle and was largely responsible for the installation of the first telephone lines in the Tacoma and Seattle areas of the Northwest. Later he entered the glass business which has developed into the Belknap Glass Company with shops in Tacoma and Seattle in Washington and Portland, Oregon. Her elementary and secondary education were received in Seattle and in Tacoma where her family has lived for a number of years. She received the B.A. degree at Washington State College, Pullman, in 1923, having had her first three years of college at the College of Puget Sound.

She was a dietitian at the Y.W.C.A. in Salt Lake City in 1923 and 1924. From 1924 to 1926 she held a similar position at The Veterans Home, Ritsil, Washington. The following three years she was on the dietary staff of Sacred Heart Hospital, Spokane.

Margaret Ohlson went to study at the State University of Iowa at Iowa City in 1929, and in 1930 received her master's degree in the Nutrition Department of the University Hospitals. The next two years she taught in the Dietary Department at the University of Indiana Medical Center at Indianapolis. In 1932, she returned to the State University of Iowa to begin work on her doctorate, which she completed in 1934 under the direction of Dr. Kate Daum, Head of the Nutrition Department, University Hospitals.

She accepted a position as Assistant Professor in the Home Economics Department at Michigan State College, East Lansing, in 1934. She was then offered a position in the Home Economics Division at Iowa State College, Ames, as Associate Professor. This position she held for nine years. In addition to a program of teaching and research, she served as dietitian at the College Hospital at Ames. In 1944, she was asked to become Head of the Food and Nutrition Department at Michigan State College, East Lansing, where her work includes some teaching but consists largely of administrative work and the direction of an extensive research program.

Margaret Ohlson has held the following professional offices: President of the Iowa Dietetic Association, Secretary of The American Dietetic Association (1948–1950), and Editor of the *Omicron Nu Magazine*. She has served on numerous committees of The American Dietetic Association. She has acted as Chairman of the Research Committee and Vice-Chairman of the Food and Nutrition Division of the American Home Economics Association. She is a member of Sigma Xi, Iota Sigma Pi, Sigma Delta Epsilon, Omicron Nu, The American Institute of Nutrition, and the American Association for the Advancement of Science.

In 1942, she was one of a group, composed of Genevieve Stearns, Martha Pittman, Hughena McKay, and Ruth Leverton, to receive the Borden Award. Again in 1950, she received the coveted Borden Award for her own research.

In the spring of 1951 she was elected to the Food and Nutrition Board of the National Research Council and she is now working on its Committee on Survey Nutrition Studies. Dr. Ohlson has had numerous research papers published in: JOURNAL OF THE AMERICAN DIETETIC ASSOCIATION, *Journal of Nutrition*, *American Journal of Diseases of Children*, *American Journal of Physiology*, *Journal of Physical Anthropology*, *Journal of Laboratory and Clinical Medicine*, *American Journal of Public Health*, *Food Research*, and the *Journal of Home Economics*. She is co-author with Goodwin Thompson of *A Laboratory Handbook for Dietetics*, published in 1942.

To the Presidency of The American Dietetic Association, Dr. Margaret A. Ohlson brings a fine background of experience and achievement, a thorough knowledge of the Association, and a stimulating and interesting personality.—*Mate L. Giddings, Professor of Home Economics, MacMurray College, Jacksonville, Illinois.*

LYDIA J. ROBERTS ESSAY AWARD

At the Annual Banquet of The American Dietetic Association held at the Hotel Statler, Cleveland, on October 12, Lillian Storms Coover, President, announced a new grant to the Association.

The Gerber Products Company, Fremont, Michigan, has made available a $500 annual award for five years for the best essay on a subject chosen from the field of the history of nutrition. The award has been named for Lydia J. Roberts in honor of her outstanding contributions to the nutrition of chil-

dren. According to the rules worked out by the Committee on History of Nutrition of The American Dietetic Association, one broad topic will be announced as the subject for the essay each year. This topic is to be selected by the Executive Board of the Association from a list presented by the Committee. For the 1952 Lydia J. Roberts Essay Award, the topic will be:

INFANT FEEDING PRACTICES IN THE AMERICAN COLONIES

Rules governing the Award, as recommended by the Committee and approved by the Executive Board of the Association, are as follows:

1. The Award shall be open to any person doing graduate study in nutrition at an accredited university, to any dietetic intern in an internship approved by The American Dietetic Association, or to any member of the Association.
2. Essays shall be typed in triplicate, double spaced, and should not exceed 20 pages in length.
3. Essays shall be in the hands of the Executive Secretary of The American Dietetic Association by June 1 of each year and shall be accompanied by a separate page giving biographical data about the essayist.
4. All essays shall become the property of The American Dietetic Association, with the right to publish in the JOURNAL or elsewhere as the Association deems advisable.
5. The decision of the judges shall be final, and no award shall be made in any year the judges consider that no essay merits an award.
6. Essays shall be judged on the basis of original investigation in the historical field of nutrition and on organization, style, and documentation.
7. Essays will be judged by a committee of three judges to be appointed each year by the Executive Board of The American Dietetic Association from names submitted by the Committee on History of Nutrition. The names of the judges shall not be made public.
8. The award shall be presented at the Annual Meeting of The American Dietetic Association or other appropriate designated occasion.

All communications regarding the Lydia J. Roberts Essay Award should be addressed to: Executive Secretary, The American Dietetic Association, 620 North Michigan Avenue, Chicago 11, Illinois.

Army Announcements Concerning Dietetic Personnel

The following dietitians are now on active military duty in the Women's Medical Specialist Corps Reserve:

1st Lt. Helen M. Bjerke, R-246
Capt. Sara B. Black, R-1396
1st Lt. Penelope Easton, R-2377
Capt. Louise A. K. Frolich, R-953
2nd Lt. Ruth E. Gilbert, R-20001
2nd Lt. Audrey Hansen, R-20051
2nd Lt. Doris E. Knights, R-20002
1st Lt. Josephine Linn, R-584
1st Lt. Mary S. Lowe, R-2010
1st Lt. Beulah C. Lumpkin, R-20000
1st Lt. Naomi Meilicke, R-2469
1st Lt. Lillian Michelson, R-20054
Capt. Beatrice Pearson, R-310
2nd Lt. Mary C. Rankin, R-2373
1st Lt. Marjorie H. Saklem, R-2359
2nd Lt. Opal I. Sams, R-20252
1st Lt. Virginia Sheret, R-2399
2nd Lt. Barbara G. Small, R-2606
Capt. Zetta Thomas, R-20056

The following dietitians have been promoted:

Captain to Temporary Major

Katharine E. Manchester, R-10016

First Lieutenants to Temporary Captains

Alice Bender, R-2507
Jeanne R. Bowdish, R-10121
Rebecca L. Burr, R-10098
Anastatia Cotter, R-2367
Marcella E. Klimesh, R-902
Mildred F. McElreath, R-191
Mary A. Neacy, R-10059
Sophia Obuhanych, R-10127
Marian M. Poitrast, R-10060
Jessy R. Powell, R-10104
Agnes J. Ratcliff, R-10106
Jean R. Wargo, R-2512
Elizabeth J. Stevenson, R-2522
Ethel J. Theis, R-267
Elizabeth V. Woodham, R-10108

Second Lieutenants to Temporary First Lieutenants

Barbara P. Apter, R-10138
Gloria Eberhardt, R-2573
Edith D. Herring, R-10129
Margaret H. Kolze, R-2546
Mary K. McDonnell, R-25557
Jeanne Poehlmann, R-2572

Alice Strong, R-10133, has been appointed in the Regular Army in the grade of First Lieutenant.

Capt. Edythe E. Benedict, R-10042, has been separated from service.

Capt. Rosamond E. Hughes, Chief Dietitian, Osaka Army Hospital, Japan, has become the first dietitian of the Women's Medical Specialist Corps to receive the Commendation Ribbon with pendant for outstanding achievement in connection with military operations in the Far East Command. Capt. Hughes received the decoration for meritorious service in her present post from June 30 to November 2, 1950.

Mary A. Tope, R-10126, was incorrectly listed in the July 1951 issue of the JOURNAL as having been appointed to a captaincy in the Regular Army. The grade reported should have been that of First Lieutenant.

Current Comment

NINE YEARS OF MILITARY SERVICE

MAJOR ELIZABETH S. CARLOSS

Chief, Food Service Division, Fitzsimons Army Hospital, Denver

Have you been thinking of joining the Women's Medical Specialist Corps? Have you been a bit apprehensive about the work, the living conditions, the social life—wondering if it would be a great deal different from your accustomed routine? I am starting my tenth year as a dietitian in the Army. Let me tell you about it—nine years' military service.

When I received my appointment I knew absolutely nothing about the greatest organization in the United States. I realized there would be regimentation, and I expected to be one of thirty or more women in a huge barracks. Yes, I was afraid I would have no privacy, no place where I could go to be by myself once in a while. I was not afraid of the work.

I shall never forget how happy I was when I found I would be assigned a room to myself. The chief dietitian took my look of amazement as disappointment and said, "This room will be comfortable when you get your things arranged." Yes, living conditions were and are very comfortable. Surroundings are attractive and clean, and many conveniences are provided. All vary a little from assignment to assignment, and there *are* rules and regulations, but no more than found in any hotel, apartment, or dormitory where up to sixty persons live under one roof.

As I said before I was not afraid of the work, but I couldn't help wondering how different it would be from the routine I had followed. But, after only a few days in my position as staff dietitian, I found that working with the Corps in a military hospital was no different from working as a dietitian in any hospital or as a food director of an institution. A job is there to be done, and one can make the position or break it by one's attitude. Sometimes it is necessary to put in many hours to accomplish an assignment; again one can accomplish the task in a normal 8-hr. day. Sometimes one must sell oneself before developing a department. There is no difference in holding a position in civilian life from holding one in the military service; one receives rewards in relation to the effort expended.

Uniforms are worn during duty hours, on official occasions, and at such times as directed by the Secretary of the Army. They are becoming and attractive, a mark of distinction, a symbol of belonging to a particular group. I feel no one can wear the uniform without a feeling of pride, just as you wear your school cap or school pin.

Social life depends on the individual. At all stations there is diversified activity that should interest everyone. Libraries are always available. There is the theater for those who enjoy movies and plays. Hobby shops are available for those who enjoy working with their hands. Facilities are provided for sports of all kinds, including golf, bowling, swimming, and tennis. Dances and parties are part of the activities of the clubs. But again, an individual must go out seeking the type of entertainment desired and go half way to meet people, giving and taking. It is no different from any place in the world.

Change? Yes, it is somewhat different from what you know, but still no more than in any large organization. Every position in food service must be staffed and sometimes new positions must be set up; consequently moves are made to keep positions filled and persons out of a rut. However, such a move is not made within one building or from one building to another; it may be to any place where the United States troops are serving, which today means the four corners of the globe. Fortunately I love to see and explore new territory, meet new people, renew old acquaintances and friendships. Also, I have the ability to adjust easily to new situations. But, oh how I hate the packing of that last shoestring! And every time I make a move, I think I just can't do it. Nevertheless the change is accomplished and after I am settled, I wonder why I was so disturbed. I even have my moves counted until my anticipated retirement. Yes, according to my estimation I must pack up at least seven more times. But I wager you in civilian life will move just as often.

It is not possible to quit and leave the military service on a mere whim or at some decided time, for the contract with the government must be fulfilled. I must stay the full time in accordance with the category I have chosen or as a Regular Army officer until time of retirement if I do my job well. But don't you make contracts in civilian life? For repayment, the government not only pays an adequate salary but provides medical and dental care, an insurance plan, and retirement in the case of Regular Army officers.

Nine years of military service versus nine years of civilian service? I have lost my temper, I have been very happy, I have been elated over the successful completion of assignments, and I have been

extremely discouraged. Still a job must be done which is the provision of the best meals possible for patients. The dietitian has the same objective whether she be in a civilian or military hospital, and she has the satisfaction of watching patients regain their health and strength. I have thrown my lot with the military service. I have enjoyed every moment and am looking forward to the next few years. Somehow I'll get packed for that next move.

REPORT FROM MARYLAND

In 1949, a reporter for a Baltimore newspaper wrote a series of articles, accompanied by pictures, called "Maryland's Shame." They were not pleasing articles to read, nor were the pictures easy on the eyes. In the series, the statement was made that only one of the five state-operated mental hospitals employed a dietitian. Things have changed since then. Today, dietitians are on the staff of four of the five hospitals. And their record is outstanding, for they have met the challenge and improved the dietetic standards and services.

IMPROVEMENTS IN FOOD SERVICE

Since these articles were published, the following changes have been effected in the hospitals in this group.

(a) In all five hospitals menus are now being made weekly. They include green and yellow vegetables every day (frozen spinach, fresh kale, green cabbage, carrots, sweet potatoes grown on the institutions' farms, and string beans). More milk and citrus fruits, better quality protein, and a much greater variety of items are also served, and whole wheat bread is supplied freely. Particular stress has been placed on the inclusion in the diets of sufficient B-vitamins. Astonishing improvements in food preparation and service have been made, and cooking is now done with careful attention to the preservation of food values.

(b) In one hospital, cafeteria service for two large dining rooms has been installed and high standards of service are maintained. The food is well flavored, and it is served piping hot and speedily. Another improvement in this hospital has been the reducing of preventable waste to a minimum. These changes have not gone unnoticed, either, for a newspaper story described the cafeteria as follows: "The cafeteria with a capacity of 600 patients has green walls, red and green tables, bright flowered plastic curtains and tiled floors—in vivid contrast to the white enameled tables and dirty wooden floors, where a few years ago stew was served in a bucket at the table."

(c) In the three hospitals where inadequate equipment was found, steam jacketed kettles, compartment cookers, additional ovens, and deep fat fryers have been installed. Thus the days of "stew meals" are over. It is now possible to provide baked or oven-fried potatoes, which add variety to the preparation of this item; fish and some meats can be baked and occasionally deep fried; and baked desserts appear often on the menus.

(d) In all five hospitals, where once the main meat (besides pork raised on the farms) was beef, now lamb and veal are also used. A visitor to one of the institutions reported that on the day of her visit lamb stew was served. It was carefully prepared with tender bits of well-flavored meat, bright pieces of carrot, small clear white onions, and a topping of perfectly baked squares of flaky biscuit. (The rest of the meal consisted of whipped potatoes; tender, well-seasoned green beans; mixed green salad with a tangy, home-made French dressing; and fresh fruit.)

(e) By paying closer attention to the selection of the meats, it has been possible to obtain a better grade to serve patients, at only a slightly higher price per pound. A net saving in total money spent is achieved, moreover, because of the greater yield of good meat, which in turn cuts the total poundage requirement.

(f) Patients are now served at least six eggs per week.

(g) Patients' breakfasts are adequate, including fruit, cereal, bread, milk, and always a "main dish." The latter may be eggs (three times a week), creamed chipped beef, scrapple, hot liver pudding, or some other appropriate protein dish.

(h) Other starchy vegetables are included in the menus now to substitute for potatoes which were formerly "run to death."

IMPROVEMENTS IN THE PHYSICAL FACILITIES

In addition to the improvements in the diets and service for patients, a number of improvements have also been made in the physical plants.

(a) A new fire wall has been installed in the cafeteria in one building. It was previously a "hot spot," for there is an oven on the other side of the wall.

(b) Toasters to provide fresh, hot toast have been installed.

(c) Exhaust systems have been put in some of the cafeterias and kitchens to carry off food odors and steam.

(d) Dishwashing machines have been overhauled and are kept spotless.

(e) In some of the buildings, there are new hoods over steam tables, ovens, ranges, and some dishwashing machines.

(f) Tile on some floors has been replaced with tile set in a reputed acid-and-fat-resistant medium.

(g) Walk-in refrigerators have been renovated. Old insulation has been taken out and replaced with new; walls have been replastered and painted; new

GOOD TEACHING TODAY FOR THRIFTY TOMORROWS!

Whether you teach student nurses or help homemakers find ways to give their families better meals, the things you teach them now give them an understanding of good nutrition and a background of practical knowledge to draw on all their lives. And, wherever they go, they will find the *basic economy* of Pet Milk the kind of practical knowledge they can apply every day.

Pet Milk, containing twice the food value of ordinary milk, offers an easy way to add extra whole milk nutrients to every meal.

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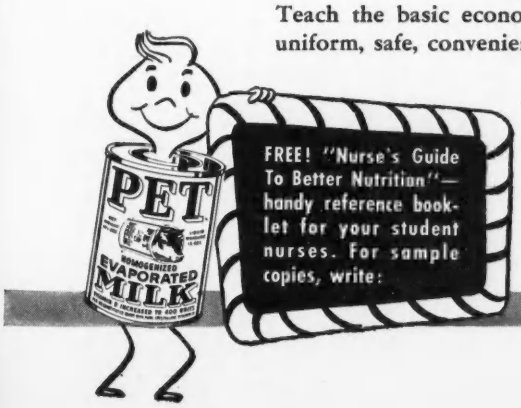
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drains have been put in; and new condensers and a spare compressor for emergency use have been purchased.

The dietitians who were hired to achieve these improvements in the food service of the mental hospitals were supported and given valued guidance by the directors of their hospitals, and they were inspired and stimulated by the gratitude shown by patients and relatives of patients. The spirit of the dietitians who have participated in this work was exemplified by the remark of one of them. When asked how she happened to accept her position, she replied, "Well, I thought there's work to be done here. I felt I could really accomplish something worth while."

Patients have not only appreciated the improvements but have participated in them. One is working on murals for a cafeteria; another has painted jars in attractive designs to "pick up" and accent the color notes in the draperies and the plants in a dining room.

Many of the patients may be trained to do certain types of work satisfactorily. The dietetic departments have played a large part in accelerating the health program in these hospitals, as well as providing a training center for food production and food service workers.

In addition to better food for the patients, greater sanitation, and better use of money, there has also been a marked upsurge in the morale of the employees in the dietary departments. Work schedules have been revised so there are fewer "split-shifts," which has helped to create greater job satisfaction. The pride and interest of every member of the dietary departments in all five hospitals is most apparent, and one feels that "here is real teamwork," not only within the departments themselves, but also with allied departments.

A "follow-up" report recently published in a Baltimore newspaper is most gratifying to Maryland dietitians, in view of the lamentable situation two years ago: "Despite the inevitable impact of inflation, hospital patients are better fed than they were two years ago . . . Wise economies are possible, because where the system had only one hospital—Springfield—with a dietitian two years ago, there is only one—the Eastern Shore—without a dietitian today."

The dietitians who have participated in this streamlining program are: Marguerite A. Nash, Patricia Whisler, Frances E. Gibson, Ina Kettlesen, Emma B. Hall, Rosalie Stuart, Greeba E. Hofstetter, Bess L. Brewer, Mary Ridinger, Agatha Rush, Frances Buckler, and Elizabeth C. Adams.

A.D.A. LOAN FUND

To encourage graduate study in the field of nutrition and dietetics, The American Dietetic Association maintains a Loan Fund for Graduate Study. Members anticipating enrollment in graduate schools are now urged to make use of this fund. Policies concerning these loans are as follows:

Eligibility: Any person who has been an active member of The American Dietetic Association for at least two years and wishes to pursue graduate study leading to an advanced degree may make application for a loan. No more than three applicants from any one state or territory can be considered.

How and When to Apply: Applications for loans should be made on special forms obtainable from the A.D.A. office in Chicago, or from the state dietetic association secretary. Application must be accompanied by full credentials, including transcript of college credits, a photograph, and a personal letter stating plans for graduate work, time and place contemplated, degree sought, and future plans. Application must be endorsed by a state officer or delegate, and by one other member of the Association familiar with the applicant's work in a professional capacity.

Amount of Loans, Interest Repayment, and Security: Loans of any amount up to $1000 may be made to qualified applicants, the total loans or installments to be adjusted according to circumstances.

Interest on loans shall be charged at the rate of 2 per cent annually, beginning one year from the date of the loan. Repayment of principal should be made as soon as possible to allow other members of the Association to benefit from the loan privilege. It is expected that all loans will be repaid within three years from the date of the loan.

Security for loans may be provided by promissory notes. The terms of loans may not be uniform, but may vary according to the facts in particular cases, as the administering authorities may deem advisable.

Selection of Loan Recipients: Final selection of recipients will be made according to qualifications of applicants and need, as judged by the Awards, Scholarship, and Loan Fund Board of the Association. The names of applicants and recipients of loans may be kept confidential if so requested.

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FREEZING FRUITS FOR DIABETIC PATIENTS

IVAN D. JONES, Ph.D.

Research Professor of Horticulture, State College of Agriculture and Engineering
University of North Carolina, Raleigh

In freezing fruits, there are three methods commonly followed with respect to the use of sugar. Certain fruits may be satisfactorily frozen without either sugar or sugar sirup. Others may be processed when mixed with dry sugar, and still others must be covered with sirup to yield a product of highest quality.

Sirup which is added to the fruit, or which is formed by the action of sugar on sliced or crushed fruit, aids in maintaining quality by excluding air from the surface of the fruit. It also aids in reducing the degree of texture alteration caused by freezing. Furthermore, sirup or sugar frequently is added to fruit before freezing to increase the sweetness. For diabetic patients, the use of saccharin to impart sweetness is sometimes suggested, but this practice is not general except for sweetening beverages.

Some physicians advise diabetic patients to use fruit preserved with sugar or sirup if the amount of sugar is known and if it is considered in planning the dietary schedule. For this reason, the recommendations made here provide for the use of sugar or sirup in freezing fruits which cannot be satisfactorily frozen otherwise. For fruits which yield a good frozen product without the use of sugar or sirup, it is suggested that no sweetening agent be used. When sugar or sirup is used, the following directions should be followed closely.

Preparation

Follow usual preparation practices as recommended for freezing fruit.

Packaging and Sweetening

DEWBERRIES, BLACKBERRIES, BLUEBERRIES, AND RASPBERRIES

Package without sugar or sirup; or mix with sugar in the proportion by weight of four parts fruit and one part sugar.

STRAWBERRIES

Slice and mix with sugar in the proportion by weight of four parts fruit and one part sugar.

PEACHES

Peel, slice, and cover with sirup containing an anti-browning agent. To 12 oz. (340 gm.) sliced fruit, add 4 oz. (114 gm.) of a 40 per cent sugar sirup made by mixing sugar and water in the proportion by weight of two parts sugar and three parts water.

If the anti-browning agent is powdered ascorbic acid, mix in the proportion of ½ tsp. (dissolved) ascorbic acid to 1 pt. sirup. Approximately 1 pt. sirup is obtained by dissolving 8 oz. (227 gm.) sugar in 12 oz. (340 gm.) cold water. The ascorbic acid solution is made by dissolving ½ tsp. powdered ascorbic acid in 2 Tbsp. cold water.

If the anti-browning agent is a commercial mixture of ascorbic acid and citric acid or some other material, follow the directions given on the package.

If the preceding directions are followed, the figures given in the table may be used in estimating carbohydrate in these frozen fruits.

Carbohydrate content of frozen fruits to which sweetening is added*

FRUIT	METHOD OF PACKING	CARBOHYDRATE		
		Naturally Occurring	Added	Total
		gm./100 gm.	*gm./100 gm.*	*gm./100 gm.*
Blackberries	No sugar	7	0	7
Blackberries	Sugar added	6	20	26
Blueberries	No sugar	10	0	10
Blueberries	Sugar added	8	20	28
Raspberries	No sugar	7	0	7
Raspberries	Sugar added	6	20	26
Peaches	Sirup added	10	10	20
Strawberries	Sugar added	6	20	26

* Values for naturally occurring carbohydrate in fruit are based on recommendations of the joint committee of the American Diabetes Association, The American Dietetic Association, and the Diabetes Section, U. S. Public Health Service (Caso, E. K.: Calculation of diabetic diets. J. Am. Dietet. A. 26: 575, 1950).

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Book Reviews

Industrial Nutrition. By Magnus Pyke, Ph.D., F.R.I.C. London: Macdonald and Evans, 1950. Cloth. Pp. 205. Price 10s.

This book was written to fill the need for information on the nutritional requirements of people doing various kinds of work. Emphasis is placed on activity, meal patterns, and food habits of the worker rather than on methods of food preparation and service which have been the subject of numerous other publications.

The fact is emphasized that the industrial nutritionist must keep in mind that many foods may be used to meet nutritional requirements and those that are a traditional part of the worker's diet must be taken into consideration if he is to be persuaded to eat the food provided during his working day.

The author's concept of industrial nutrition as a social science is developed throughout the text. The food service manager is cautioned to give consideration to the whole pattern of the life of the worker if she wishes to make the greatest contribution to the health of the worker through better nutrition.

To the dietitian, there may seem to be a misleading emphasis on the importance of calories in some places, but the author does finally conclude that each meal must be "nutritionally" important—fit into the pattern which makes up the day's "diet" and that each worker must be considered as an individual. It is recommended that the worker be served the kind of helping he would like. This, of course, does not fit into our concept of standardized servings and would be difficult to accomplish in a large industrial cafeteria.

There are few errors but one in addition results in the estimate of the calories needed by a typist as 2085 and by a charwoman as 2035.

Drawing on his own experience in England and a careful survey of the literature, the author has presented the subject in a manner which makes an easily read review for anyone interested in industrial health.—*Wintress Dalbey Murray, Nutrition Director, Medical Department, Eastman Kodak Company, Rochester, New York.*

Quartity Cookery. By Nola Treat and Lenore Richards. 2nd rev. ed. Boston: Little, Brown & Company, 1951. Cloth. Pp. 628. Price $4.95.

In reviewing this book, one feels that here is the key to the success of these two women whose reputation for restaurant management and quality food production has become known throughout the United States.

Realizing that the menu forms the basis for good food management, the authors have devoted one-fourth of the book to a discussion of the menu, its relation to the physical plant, the organization of work, nutritional requirements, the budget, and the pleasure of the guest. The mechanics of menu making are outlined. One chapter is written on the importance of judging good food. These chapters are well worth the reading time for any student of institutional management.

Part Two includes lists of helpful suggestions for use in menu planning and tables of weights and measures. A particularly useful table is on "Yields and Uses of Common Scoops."

The greater part of the book is devoted to recipes many of which are recognized as old favorites by patrons of the authors' restaurant. Surprisingly, some of these are made from leftovers. Some out-of-the-ordinary recipes include escalloped eggplant with chicken giblets and mushrooms, baked thuringer with sauerkraut, kitchenette squash with ham patty and dressing, grilled cheese vegetable sandwich, green rice made with spinach, and cottage cheese pie.

Detailed and practical directions are given to aid the inexperienced. Time-saving devices have been pointed out. Methods for using large quantity equipment and hand procedures are both described. The usefulness of sharp freezers for staggered production of fresh pastry is considered.

If you are teaching, producing, or planning food for large quantity use, you will find *Quantity Cookery* practical and stimulating.—*Mildred Bonnell, Assistant Director of Dining Halls and Assistant Professor of Home Economics, University of Washington, Seattle.*

The Chemistry and Technology of Food and Food Products. Vol. I. 2nd rev. ed. Edited by Morris B. Jacobs, Ph.D. New York: Interscience Publishers, Inc., 1951. Cloth. Pp. xxv + 832. Price $12.

This book is the first in a series of three volumes. The editor states in the preface that advances in food chemistry and technology have been so rapid and extensive "that it is very difficult for a single individual to survey any given field adequately." In the preparation of the entire series, thirty-nine collaborators cooperated in covering various aspects of this broad subject.

Volume I is divided into three parts. Part I is termed "Fundamentals." In this section, subjects familiar to all dietitians and nutritionists, such as the carbohydrates, lipids, proteins and amino acids, minerals, vitamins, digestion, food spoilage, and food poisoning, are discussed in detail. In the compilation of the percentage of lipids in foods and calories per 100 gm., however, the data are not based on the latest available figures in the new Agriculture Handbook No. 8, *Composition of Foods—Raw, Processed, Prepared.* This is also true of other food tables in various parts of the book. Many refer to data published several decades ago. While these are historically accurate, they are not of practical, present-day use to workers in the field of food and nutrition.

Part II is entitled "Unit Operations and Processes." In this section, the chapters on processing and storage of food will be of greatest interest to groups responsible for processing and storing large quantities of food.

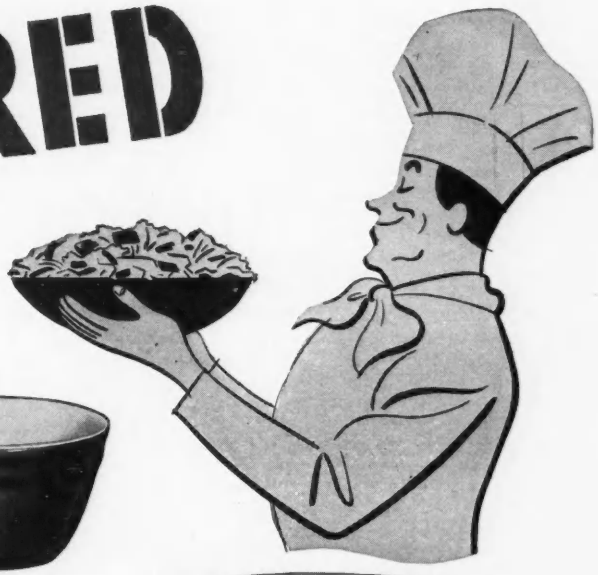
Part III deals with "Sanitary and Quality Control." The chapters on agencies responsible for food supervision, food grading, food machines, sanitation, insect and fungus control in food processing, and rodent control are of special interest to persons directly concerned with these subjects in institutions and schools.

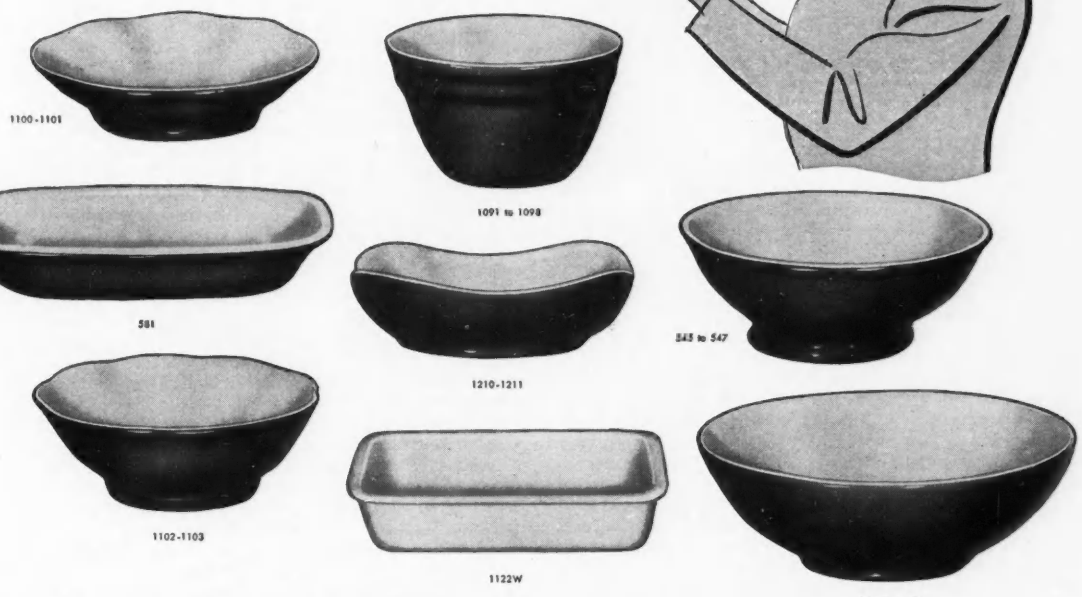
The book is well illustrated with tables, easy to read, and the references at the bottom of each page facilitate checking source material and dates of publication.—*Anna dePlanter Bowes, Chief, Nutrition Division, Pennsylvania Department of Health, Harrisburg.*

Modern Dietetics. By Doris Johnson. Edited by Hazel E. Munsell, Ph.D. New York: G. P. Putnam's Sons, 1951. Cloth. Pp. 537. Price $4.95.

Dr. Doris Johnson, Chairman, A.D.A. JOURNAL Board,

PREFERRED for SALADS





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presents in this book the newer knowledge of nutrition and dietetics, for both the dietitian and other members of the hospital team. As an Instructor in Dietetics in the Department of Nursing, College of Physicians and Surgeons, at Columbia, she prepared this work with the counsel and guidance of Dr. Hazel E. Munsell.

Part I deals with normal nutritional requirements and with the relation of each nutrient to the basic daily dietary pattern. A section is devoted to variations of the normal dietary requirements for childhood, adolescence, and old age. Chapters are included concerning food economics, nutrition education, and national and religious food customs.

Part II, which concerns diet therapy, treats the subject matter from a dietetic viewpoint. Instead of listing an individual dietary for each disease, the author shows that normal dietaries which have certain therapeutic principles may be applied, with only slight modifications, to a number of diseases. This results in fewer and simpler dietary modifications as well as more efficacious diet therapy. Discussions of the regular hospital diet and its modifications are given. The chapter on modifications in carbohydrate content is based on simplified calculations for diabetic diet as compiled by the joint committee of The American Dietetic Association, the American Diabetes Association, and the Diabetes Branch, U. S. Public Health Service, of which the author was a member. The chapter on modifications in mineral content contains an adequate low-sodium diet which is considered sufficiently low to be of therapeutic value in most of the diseases for which it is prescribed. Hints in food selection and preparation are given for this diet.

Part III presents material on meal planning, food selection, and food handling and preparation and is a companion to the author's *Laboratory Manual in Cookery.*

Part IV contains tables needed by the therapeutic dietitian. These include: a food composition table, the food vaiues for which have been taken for the most part from U.S.D.A. Agriculture Handbook No. 8, 1950; a food composition table for the short method of dietary analysis; sodium and potassium content of foods; a table of cholesterol content of foods; one dealing with percentages of major mineral elements in foods; an analysis of alcoholic beverages; weight and height tables for all ages; and tables on composition and physiologic constituents of blood.

This book is concise and complete, and written to present fundamentals in a clear and applicable fashion.—*Louise Irwin, Assistant Professor of Dietetics, Indiana University Medical Center, Indianapolis.*

Essentials of Nutrition. By Henry C. Sherman and Caroline Sherman Lanford. 3rd ed. New York: The Macmillan Company, 1951. Cloth. Pp. 454. Price $4.25.

In this new edition, "the general scope and character are much the same as in previous editions." The information in each chapter and the selected reading lists have been brought up to date. The presentation of the subject matter is clear and concise. Among the recent advances in nutritional knowledge which have been included in the present edition are the data pertaining to the "quantitative requirements of individual amino acids, the supplementary relations between proteins and the values of newly discovered vitamins in the maintenance of blood." The authors stress the benefits which are derived from liberal intakes of essential nutrients in contrast to those of minimal adequacy.

Because the book is elementary in nature, the section in the appendix devoted to the description of fatty acids could well be omitted. The omission of the section on statistics is to be commended.

The food composition tables have been revised and are now based on the data presented by the U. S. D. A. Agriculture Handbook No. 8, 1950. It would seem that for the beginning student in nutrition it would have been more desirable to include *either* the Atwater factors for energy *or* the specific factors rather than both sets of figures.

This edition should continue to serve as a useful and reliable text in the teaching of nutrition to individuals with a limited background in the physical and biologic sciences.—*Dena C. Cederquist, Ph.D., Associate Professor, Department of Foods and Nutrition, Michigan State College, East Lansing.*

Crops in Peace and War. Yearbook of Agriculture, 1950–1951. Washington, D.C.: Government Printing Office, 1951. Pp. 942. Cloth. Price $2.50.

More than 150 specialists in various phases of crop production and utilization have contributed 19 chapters and 148 sections of this *Yearbook.* The material presented deals with the various crops produced in the United States, not only for food, but for animals, industrial uses, fibers for clothing and as a source of by-products for the manufacture of drugs and antibiotics. Production, processing, composition, and uses are discussed. Line drawings, tables, and graphs are presented throughout. There is a glossary of technical terms.

Several sections deal with foods. The index is particularly helpful for the dietitian or food specialist who otherwise might find it difficult to locate the information in which she is interested.

The book covers a wide field and is of interest to the farmer, manufacturer, industrialist, homemaker, and all who deal with food or other crops of the land.—*E. Neige Todhunter, Ph.D., Head, Department of Foods and Nutrition, University of Alabama, Tuscaloosa.*

Greek Cookery. By Nicholas Tselementes. New York: D. C. Divry, Inc., 1950. Cloth. Pp. 239. Price $3.

Guests of the St. Moritz Hotel in New York are already familiar with some of the unusual dishes prepared by their well-known Greek chef brought to this country by the president of that hotel. In this new cook book, Mr. Tselementes has given the public many of his secrets of how to prepare common foods in the Greek pattern with the special touches which have made his cuisine famous. Recipes for lamb—the meat of preference of Greeks—offer a wide variety of entrées, some of which serve to make less expensive cuts delectable. Liver spleen, sweetbreads. and other organ meats figure prominently in the Greek cuisine served with pilaf (rice), prepared in approved style. Egg plant, cauliflower, squash, okra, and tomatoes take on new glamour prepared according to Mr. Tselementes. Parsley, onions, garlic, anise, dill, and mint are used extensively as seasonings.

Of course, oil is the preferred cooking fat, and eggs and cheese are used often in prepared dishes.

Fish and other seafood, more plentiful than meat along the Greek coast, have assumed a prominent place in the cookery of that country. Familiar mackerel, swordfish, and lobster prepared in unfamiliar ways are followed by special delicacies such as squid, eels, and mussels. A variety of hors d'oeuvres, canapés, and typical Greek soups offer appetizers de luxe.

Desserts are simple as compared with those given in most American cook books. Pastries and cakes seasoned with spice or lemon and not very sweet are typical. Sugar consumption in Greece is less than one-fourth that of the United States.

The use of Turkish names for many Greek dishes is explained by the history of those two peoples. After the fall of Constantinople, Greek cooks were forced to refer to their dishes in the Turkish language, although they remained products of Greek culinary art and continue to be so recognized today.

This book would be a joy to an experienced cook who wishes to give the unusual touch, but it is scarcely adapted for the beginner.—*Helen S. Mitchell, Ph.D., Dean, School of Home Economics, University of Massachusetts, Amherst.*

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Current Literature

Contributed by Mildred Bonnell and administrative interns, University of Washington, Seattle; Janette C. Carlsen and Ethel M. Miller, The Johns Hopkins Hospital, Baltimore; Margaret Delaney, American Institute of Baking, Chicago; Pauline Kegereis, The Children's Mercy Hospital, Kansas City, Missouri; June Norman, University of Chicago Clinics; the Dietary Staff, Wesley Memorial Hospital, Chicago; and the Journal staff

AMERICAN JOURNAL OF DISEASES OF CHILDREN

Vol. 82, July, 1951

* Aqueous dispersions of vitamins A and D in premature infants. Studies with reference to rickets and retrolental fibroplasia. B. Kramer, S. M. Gordon, H. M. Berger, and A. E. Sobel.—p. 17.

Aqueous Dispersions of Vitamins A and D for Premature Infants. It has been confirmed that vitamin A is more readily absorbed from an aqueous than from an oily medium. From this study, it is evident that vitamin D in aqueous dispersion prevents rickets. The possibility of better results with an aqueous dispersion of vitamin A is indicated and discussed. There was no increase in the incidence of retrolental fibroplasia when vitamin A was given in aqueous dispersion compared with the incidence of this disease when vitamin A was given in oil.

AMERICAN JOURNAL OF MEDICINE

Vol. 11, August, 1951

Lipid metabolism and atherosclerosis. R. G. Gould. —p. 209.

AMERICAN JOURNAL OF NURSING

Vol. 51, September, 1951

* Be smart—eat a good breakfast. M. E. Ingoldsby. —p. 559.

Good Breakfasts. Experiences of the West Virginia State Nutritional Committee in promoting better breakfasts are discussed. Emphasis is placed on the initiation of breakfast programs in industry.

AMERICAN JOURNAL OF PUBLIC HEALTH

Vol. 41, Part I, August, 1951

Epidemiologic studies in dental caries. III. The interpretation of clinical data relating to caries advance. J. D. Boyd and K. E. Wessels.—p. 976.

Vol. 41, Part II, August, 1951

* Evaluation of diagnostic signs and therapeutic tests for nutritional deficiency states. D. G. Wiehl.—p. 69.

Vol. 41, September, 1951

The longevity and behavior of pathogenic bacteria in frozen foods: the influence of plating media. S. E. Hartsell.—p. 1072.

Nutritional Deficiency States. Present-day knowledge as related to the evaluation of diagnostic methods for nutritional deficiency states is reviewed. The author feels that no investigations of the signs of nutritional deficiencies and no appraisal of therapeutic studies should be attempted without clinical photographs if the tissues under observations can be photographed. Concerning therapeutic tests of deficiency signs, it is pointed out that homogeneity in the groups of control and treated subjects is impossible. Factors to be considered in comparing groups are: the initial deficiency status, non-dietary conditioning factors contributing to production of the deficiency, and dietary history and habits. Concluding the article is an extensive bibliography covering signs and diagnosis of nutritional disorders and/or response to therapeutic treatment and supplementation of diets.

ANALYTICAL CHEMISTRY

Vol. 23, August, 1951

Estimation of antioxidants in lard and shortening. J. H. Mahon and R. A. Chapman.—p. 1116.

ANNALS OF INTERNAL MEDICINE

Vol. 34, May, 1951

* Present status of the etiology of pernicious anemia. W. B. Castle.—p. 1093.

The relation of hyperplastic arteriosclerosis to diabetes mellitus. E. Moschowitz.—p. 1137.

Vol. 34, June, 1951

*An evaluation of rigid dietary sodium restriction in the management of ascites in cirrhosis of the liver. C. R. Lowe and D. C. Overy.—p. 1396.

Vol. 35, August, 1951

* Nutrition factors in cardiac disease. T. M. Durant. —p. 397.

Present Status of the Etiology of Pernicious Anemia. Recent studies suggest a deficiency, chiefly of vitamin B_{12}, in pernicious anemia. This deficiency is largely due to a lack of gastric secretion which is usually a manifestation of advancing age and of hereditary predisposition. Local disease and surgical ablation may also destroy this essential function of the stomach. Nutritional macrocytic anemia may be caused, too, by defective diets in which the predominant deficiency is not of vitamin B_{12} but of pteroylglutamic acid. Dietary deficiency of ascorbic acid may also restrict the formation of folinic acid which is closely related to pteroylglutamic acid. It is concluded that vitamin B_{12}, pteroylglutamic acid, and ascorbic acid are apparently required for normal red blood corpuscle formation.

Dietary Sodium Restriction for Ascites in Cirrhosis. Eight patients with portal cirrhosis were put on diets containing approximately 200 mg. sodium and 50 gm. protein daily. Four glasses of Casec or Lonalac beverages were added to increase the daily protein intake to 146 gm. In seven of the eight cases, prevention and retardation of the formation of ascites were accomplished.

Nutritional Factors in Cardiac Disease. There is an ever-increasing number of patients with congestive heart failure who have developed a nutritional deficiency pattern. These are patients whose lives have been prolonged by drastic salt restriction and diuretic therapy, but who have become relatively resistant to therapeutic efforts. Successful management depends on amelioration of the hypoproteinemia, nutritional anemia, and vitamin deficiencies. Preferably, the aim of the treatment should be preventive. The dietary fat, both animal and vegetable, should be limited in atherosclerosis, and the other components of the diet should be adequate.

ARCHIVES OF INTERNAL MEDICINE

Vol. 87, May, 1951

* Clinical aspects of dietary depletion of riboflavin. O. W. Mills, E. Liebert, D. L. Steinberg, and M. K. Horwitt.—p. 682.

Vol. 88, July, 1951

* A rational basis for the use of low sodium, high protein diet therapy in Laennec's cirrhosis. R. M. Karb, R. W. Keeton, N. O. Calloway, C. R. Morey, R. A. Chapman, and R. H. Kyle.—p. 61.

Recent advances in nutrition. Review of the literature. G. A. Goldsmith and J. Gibbens.—p. 93.

Clinical Aspects of Dietary Depletion of Riboflavin. Recent studies indicate that multiple vitamin and amino acid deficiencies may be involved in the lesions heretofore attributed to a deficiency of riboflavin. In the present study, fifteen male subjects were given a diet adequately supplemented with all known necessary nutrients and deficient only in riboflavin. Fourteen other subjects were observed as controls. The experimental diet contained .55 mg. riboflavin in 2200 calories and was maintained for a period of nine to seventeen months. During this time outstanding pathologic findings were observed in the skin of the experimental subjects. Angular stomatitis, seborrheic dermatitis, and scrotal lesions were prevalent, but no evidence of glossitis, vascularization of the cornea, or neurologic abnormalities was noted. Studies of the excretion of riboflavin in the urine suggested that the riboflavin requirement for a resting adult male is between 1.1 and 1.6 mg. per day and that at intakes of less than 1.1 mg., it is impossible to maintain a reserve of riboflavin.

Diet Therapy in Cirrhosis. Diet therapy is an important part of the management of patients with cirrhosis and as-

Adequate Protein Nutrition... A Vital Factor in Recovery Processes

Among the problems of convalescence and of preoperative and postoperative care, adequate protein nutrition assumes vital importance. Such is indicated by the observation that a deficiency of but one essential amino acid in the diet of the normal individual quickly leads to an acute amino acid deficiency syndrome characterized by appetite failure, weight loss, and malaise.

Animal studies have forcefully demonstrated the adverse effect of inadequate protein nutrition on recovery processes.[1] Protein-depleted rats fed an adequate repletion ration manifest a rapid recovery of lost weight, of normal plasma protein and hemoglobin levels, of certain enzyme systems, and of normal capacity to synthesize antibody protein and to resist infection. On the other hand, reduction in the amount of but one essential amino acid in the repletion ration quickly causes loss of appetite, diminished food consumption, and inadequate weight recovery. This quick appearance of overt symptoms due to a shortage of an essential amino acid contrasts sharply with the delayed appearance of symptoms induced by deficient intake of any other essential nutrient.

These manifestations of acute amino acid deficiency noted in the rat can occur as readily in the normal human subject consuming a diet lacking in any one of the eight essential amino acids.[2] Loss of appetite and of body nitrogen accompanied by malaise quickly results. Furthermore, addition of the missing amino acid to the diet quickly restores the appetite, nitrogen equilibrium, and the previous state of health. Apparently, even in normal persons, lack of an amino acid in the diet partially or completely interrupts protein synthesis as well as increases tissue protein catabolism.[1] The conclusion is incontestable, therefore, that adequate protein nutrition is vital for speeding the processes of recovery from massive disease or major surgery.

Meat—all varieties and cuts—richly provides protein containing all the essential amino acids which are needed for the repair of traumatized tissue, the upkeep of normal tissue, and for other vital uses. Furthermore, meat is a dependable dietary source of iron and the vitamin B complex—riboflavin, niacin, thiamine, pyridoxine, and the newly discovered B_{12}. In health and in illness, meat ranks high as an important factor of the well-balanced diet.

1. Cannon, P. R.: Recent Advances in Nutrition with Particular Reference to Protein Metabolism, Lawrence, Kansas, University of Kansas Press, 1950, pp. 56-60.

2. Rose, W. C.: The Nutritive Role of the Amino Acids, The Science of Nutrition, New York, The Nutrition Foundation, 1946.

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cites. The high-protein diets correct tissue depletion and build an endothelial protoplasmic barrier against high portal pressure, thus preventing the formation of ascitic fluid. Sodium restriction also helps in preventing the formation of ascitic fluid. Adrenal disturbances may play a major part in producing sodium retention in cirrhotic patients.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

Vol. 146, August 18, 1951

* Principles and facilities for the care of newborn infants in the hospital. L. B. Slobody and H. M. Wallace.—p. 1462.
* Bacillary dysentery. Editorials and Comments.—p. 1514.

Vol. 146, August 25, 1951.

* Chronic vitamin A poisoning. Report of a case. G. Blair.—p. 1573.

Vol. 147, September, 1951

* Etiology and treatment of serum potassium deficits. H. E. Martin, T. B. Reynolds, E. N. Snyder, C. J. Berne, R. E. Homann, Jr., H. A. Edmondson, N. Blatherwick, I. Fields, M. Wertman, and L. Westover.—p. 24.
* Chlorophyll. Queries and Minor Notes.—p. 99.

Vol. 147, September 8, 1951

* Hypoproteinosis of childhood. H. D. Lynch and W. D. Snively, Jr.—p. 115.
* Idiopathic hyperlipemia. Queries and Minor Notes.—p. 205.
* Choline and inositol in fat metabolism. Queries and Minor Notes.—p. 205.
* Vitamin E and fertility. Queries and Minor Notes.—p. 207.
* Fruit juices and atomic burns. Queries and Minor Notes.—p. 208.

Care of Newborn. Facilities for formula preparation rooms are included in this discussion with emphasis being placed on separating clean and unclean activities. The authors feel that in general the recommendations of the American Hospital Association manual on procedures and layout for the formula room are satisfactory.

Bacillary Dysentery. Of special interest in the short resumé is the reiteration that bacillary dysentery is transmitted by food, fingers, and flies.

Vitamin A Poisoning. Since 1944 there have been fourteen cases of hypervitaminosis A reported. Still another case is presented in this paper, the patient having an unusual cranial bone involvement. Because of the dangers of overdosage, caution is advised in the administration of vitamin A in the feeding of healthy infants.

Potassium Deficits. Potassium deficits may result from low-potassium intake, accelerated loss of potassium from the body, or from rapid shifts of potassium from extracellular to intracellular compartments. These rapid shifts may be brought about by use of drugs or other substances, such as insulin, large amounts of dextrose, and testosterone. Results of treatment in 150 patients are listed.

Chlorophyll. Two queries concerning the use of chlorophyll as a deodorant, when taken internally, are answered. It is stated that there is no evidence that chlorophyll or the available derivatives has any harmful action; that chlorophyll is a fairly constant constituent of a balanced diet which includes green vegetables. Further, it is noted that satisfactory control tests have not been made with chlorophyll taken internally as a deodorant; that not only is the mechanism of action unexplained, but it is not at all certain that the action exists. Many herbivorous animals, including the goat, consume large quantities of chlorophyll and, of course, some of these animals are noted for their pungent aroma.

Hypoproteinosis of Childhood. These physicians coin a new term to describe the clinical picture of children who have a mild form of protein deficiency. From hundreds of cases in their files, they discuss symptoms and treatment of nine cases. Invariably, dietary history reveals an insufficiency of such foods as meat, eggs, and cheese.

Hyperlipemia. Abnormal lipid metabolism of several kinds is described. Suggested treatment for the one patient in question (with primary idiopathic hyperlipemia) included a low-fat, low caloric diet.

Choline and Inositol in Fat Metabolism. Though choline and inositol or other lipotropic substances have favorable effects upon fatty livers of choline-deficient rats, it is not felt that these medications have been proved useful as therapeutic agents in human beings, except in rare deficiency diseases. No harmful effects from their administration has been reported.

Vitamin E. The familiar question of the effect of vitamin E on fertility in human beings is once again answered by noting that at the best, this vitamin appears to be generally supportive rather than specifically corrective for fertility. It is pointed out that vitamin E is widely distributed in the foods of the ordinary diet.

Fruit Juices and Atomic Burns. Two letters pose objections to statements in an article published June 2, 1951 on the subject of using fruit juices in burn cases. Both letters mention that because of the high potassium content of some fruit juices, their excessive use in contraindicated. The reason given is that in the early stages of extensive burns, the serum potassium is elevated and large potassium intake could be lethal.

JOURNAL OF BIOLOGICAL CHEMISTRY

Vol. 191, August, 1951

Growth promotion by keto and hydroxy acids and its relation to vitamin Bs. J. T. Holden, R. B. Wildman, and E. E. Snell.—p. 559.

JOURNAL OF CLINICAL INVESTIGATION

Vol. 30, August, 1951

* Studies in diabetes mellitus. II. The occurrence of a diuresis in diabetic persons exposed to stressful life situations, with experimental observations on its relation to the concentration of glucose in blood and urine. L. E. Hinkle, Jr., C. J. Edwards, and S. Wolf.—p. 818.

Studies in Diabetes Mellitus. In persons with diabetes mellitus, exposure to stressful life situations may lead to a diuresis. This diuresis is characterized by a 200 to 500 per cent increase in the rate of water excretion, accompanied by a rise in the excretion of chlorides and ketone bodies. The stress diuresis which occurs in aglycosuric diabetic persons is similar to that observed in non-diabetic individuals. When diuresis due to stress occurs in diabetic persons who are glycosuric, the rate of rise in glucose excretion is parallel with the rate of water excretion, and there is no major change in the urinary glucose concentration. The ingestion of concentrated glucose solutions is well tolerated by diabetic persons in the absence of stress; but in a setting of stress, the ingestion of concentrated glucose solutions may accentuate the loss of water and chlorides.

THE LANCET

Vol. 2, August 4, 1951

* Fecal excretion of amino acids in infants. C. A. C. Ross.—p. 190.

Vol. 2, August 11, 1951

* Cereals, phytic acid, and calcification. A. R. P. Walker.—p. 244.

Fecal Excretion of Amino Acids in Infants. The excretion of amino acids in the feces of infants was studied in relation to type of diet. Chromatographic analysis of feces showed that in the breast-fed infant, excretion of free amino acids was more abundant than in the artificially fed infant. Nitrogen partition of the feces confirmed this finding. Alanine was the predominant amino acid in the feces of the breast-fed infant, valine and the lysine group in the feces of the artificially fed baby. Feedings of diluted cow's milk preparations gave a fecal amino acid pattern approximating that found in breast-fed infants. The contribution of the intestinal organisms and intestinal secretions to the fecal amino acid pattern was investigated in infants receiving treatment for diarrhea and vomiting. Apart from the predominance of valine, the pattern of amino acids from the intestinal organisms and intestinal secretions closely resembled the amino acid excretion found in breast-fed babies. It is suggested that the type of diet in infancy may be closely related to the establishment of certain pathogenic intestinal organisms.

Cereals, Phytic Acid, and Calcification. Cereals and certain cereal products contain a substance recently identified as phytic acid, which, under certain conditions, is anti-calcifying to dogs. It has been widely accepted that this acid is also anti-calcifying to man, the belief being that in the intestinal tract this acid, under certain conditions, precipitates calcium, and by reducing the amount available for absorption, restricts growth and even causes rickets. Experimental evidence suggests, that, though phytic acid has an immediate disturbing effect on the retention of calcium, it is not permanent. Considerable caution is required in the interpretation of the experimental evidence in terms of practical nutrition. Where there is plenty of sunlight, a diet low in calcium, even when accompanied by a high intake of phytic acid, need not prevent excellent growth in European children. Since cereals and their products are of such profound importance in human nutrition, it seems reasonable to insist that any nutritional stigma at-

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tached to their consumption should be based on conclusive evidence. It appears that the importance of phytic acid as an anti-calcifying factor in human nutrition has not been established.

NEW YORK STATE JOURNAL OF MEDICINE

Vol. 51, August 1, 1951

* Experiences with intravenous gelatin. R. G Hicks and V. J. Collins.—p. 1819.

Experience with Intravenous Gelatin. Clinical cases of hemorrhagic shock during anesthesia and surgery have been presented in which intravascular gelatin has been partially effective in restoring normal blood pressure. In one instance gelatin was used intra-arterially without complications. No adverse changes in renal or hepatic functions were noted. Gelatin is not considered a substitute for whole blood, but only as a blood volume supplement. It should be given with caution to patients with cardiac impairment.

PSYCHOSOMATIC MEDICINE

Vol. 13, May-June, 1951

Studies in diabetes mellitus. III. Life history of three persons with labile diabetes and relation of significant experiences to the onset and course of the disease. L. E. Hinkle, Jr., F. M. Evans, and S. Wolf.—p. 160.

PUBLIC HEALTH REPORTS

Vol. 66, August 17, 1951

* Effect of topically applied zinc chloride and potassium ferrocyanide on dental caries experience. R. W. Anderson and J. W. Knutson.—p. 1064.

Dental Caries and Zinc Chloride and Potassium Ferrocyanide. Caries incidence for treated and untreated permanent teeth in 299 elementary school children of Chattanooga was not appreciably altered when the teeth were treated with zinc chloride and potassium ferrocyanide. The conclusion is that, under the conditions of this experiment, the topical application of zinc chloride and potassium ferrocyanide to the children's teeth, according to the technique of Gottlieb, did not significantly reduce the vulnerability of the teeth to caries.

SCIENCE

Vol. 114, August 24, 1951

Free amino acids in potato tubers altered by 2,4-D treatment of plants. M. G. Payne, J. L. Fults, and R. J. Hay.—p. 204.

SCIENTIFIC MONTHLY

Vol. 73, August, 1951

* Nutrition under the Chinese communist government. W. H. Adolph.—p. 128.

Nutrition under the Chinese Communists. In Communist China three levels of diets are specified: (a) The first-class diet—for the small group of high-ranking government officials and others engaged in strenuous intellectual work—contains wheat bread, or rice, a variety of vegetables, and a liberal allowance of meat. (b) The second-class diet—for office workers and lesser officials—provides less meat and a

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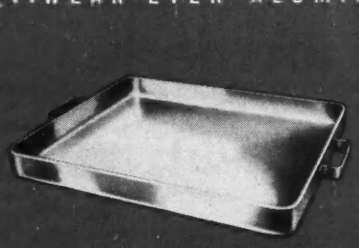

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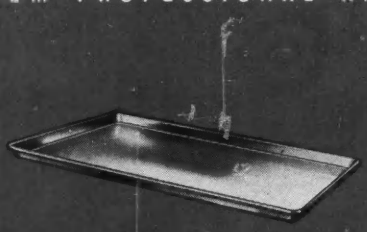

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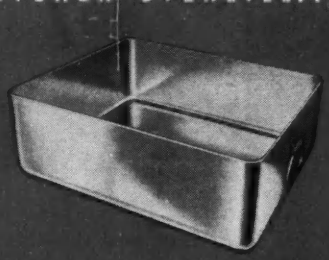

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smaller variety of vegetables, but stresses the importance of soybean curd and similar protein foods. (c) The third-class diet—for the large mass of laborers and unskilled workers—consists mainly of millet, maize, or one of the mixed cereals with some added vegetables. The importance of all this is not so much in the particular food items specified, but in the fact that a government is undertaking to prescribe a national dietary. The most far-reaching action taken by the Chinese Peoples' Republic in the realm of nutrition is that which fixed the extraction rate for the milling of wheat to 81 per cent minimum extraction. Millet is the cereal that now occupies the center of the stage in North China. The biologic value of the protein in millet is low. Analysis invariably shows a low content of lysine, with low values also for tryptophan and methionine. It would appear that the successful use of millet as the principal item of food in a vegetarian dietary rests upon the discovery of a convenient and economical lysine-containing food as supplement. Soybean curd and soybean milk are being re-emphasized, and the Puerto Rican sweet potato is being introduced because of its superior vitamin A content compared to the sweet potato now being grown. The present authorities insist that increased crop yields are possible and that they will solve the immediate problems of China's food supply.

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SOUTHERN MEDICAL JOURNAL

Vol. 44, August, 1951

* Diet in the management of peptic ulcer. J. W. Larimore.—p. 742.

Diet in Peptic Ulcer. In treatment of peptic ulcer, dietary management is indispensable. Without any gastric motor impairment, it is necessary to eliminate only raw and sour foods, relishes, spices, exotic seasonings, nuts, fruit juices, excessive meat, fats, rich and mixed desserts, melons, and berries. A dry diet rather than liquid will take up the gastric secretions more rapidly. When gastric motor impairment complicates the ulcer, the three-meal regimen is even more important for it gives the stomach time to empty, and when pyloric obstruction is pronounced, there is added need for repeated lavage during the first phase. The diet is then limited as to quality according to the degree of motor impairment and the ease of aspiration. With hemorrhage, the three-meal regimen is also followed in association with adequate antacid. Experience with the three-meal diet has indicated that by arranging the diet in this way to conserve the cyclic function of gastric work, thereby providing an inter-digestive rest period free of stimulus, use is made of the intact-neuro-muscular-glandular-visceral organization to correct the continuous secretion and the constant acid which prevents ulcer healing and permits recurrence.

FOOD ENGINEERING

Vol. 23, August, 1951

* New flavor evaluation method. D. R. Peryam, D. V. Josephson, R. J. Remaley, and H. L. Fevold.—p. 83.
* Now—a readily made fondant for bakers, confectioners. R. N. Prince.—p. 100.

Flavor Evaluation. Dried milk was the "guinea pig" for a new method of evaluating flavor which has been developed at the Quartermaster Food and Container Institute for the Armed Forces in Chicago. The investigation, although still in an early stage, has so far proved satisfactory with regard to reproducibility and correlation with consumer preference.

Fondant. Old-fashioned quality may return to icings, fillings, and candy creams, now that a new precooked, dehydrated fondant material is on the market. Fondant-making became a nearly "lost art" in recent years owing to the high cost of labor and the technical knowledge and skill required. This new product will eliminate problems of time, labor, skill, and control even for small bakeries and confectioneries.

HOSPITAL MANAGEMENT

Vol. 72, August, 1951

* The Dietary Department of the University of Chicago Clinics. E. M. Eck.—p. 76.
* How large dietary emphasizes service to individual patient. T. Pollen.—p. 78.

Dietary Department, University of Chicago Clinics. This is Part II of a discussion of the remodeled Dietary De-

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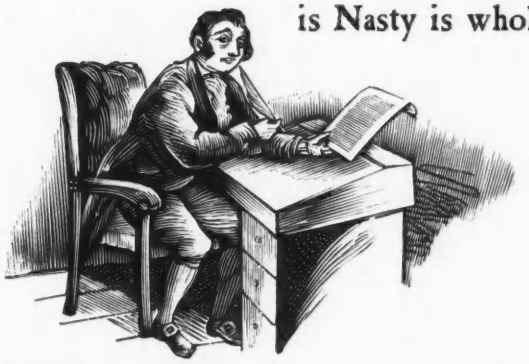

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partment at the University of Chicago Clinics. The cafeteria dining room is described. Special features include round, perforated metal cylinders in which silver tableware is washed, transported, and dispensed. The décor of the dining room is also described, as is the method of transporting dishes from the dining room to the dishroom (by subveyor).

Large Dietary Department. This is the first in a series of articles on the activities of dietitians in various types and sizes of hospitals and is written by the Public Relations Director of A.D.A., Thelma Pollen. The food service at Saint Marys Hospital, Rochester, Minnesota, is the subject of this article.

HOSPITALS

Vol. 25, September, 1951

Training and using auxiliary workers to aid the dietitian.—p. 129.

HOTEL MANAGEMENT

Vol. 60, August, 1951

* The art of giving orders. D. E. Lundberg.—p. 48.
* Fish preservation and cooking methods. How fish should be cooked. P. P. Logan.—p. 90.

Giving Orders. The way in which an order is given often determines the way in which it will be carried out. The purpose of an effective order should be either to change attitudes and behavior or to set established habits in motion. In giving orders, avoid sarcasm and ridicule, emphasize the positive, give an impression of self-confidence, choose the proper time and place, and direct through the proper channel.

Fish Cookery. The fundamental rules for cooking practically all fish are few and easy to follow. Methods discussed include pan-frying, deep fat frying, broiling, baking, planking, boiling, and steaming. The preference among these methods depends on the fat content of the fish. Fat fish, such as salmon or shad, are preferred for baking, broiling, or planking because their fat content will keep them from becoming dry. Lean fish, such as cod or halibut, are kept in a moist condition by boiling or steaming. In general, fish should be salted and permitted to stand for 10 min. before cooking. It is important to avoid overcooking.

THE HOTEL MONTHLY

Vol. 59, September, 1951

* A timely review of food buying practices.—p. 43.

Food Buying Practices. Influences on food buying are highlighted. Topics discussed include weather conditions as they affect crops, container sizes and quantity control, the advantage of special food features, such as baked beans or soups, brand name merchandising, and the salesman-buyer relationship.

INSTITUTIONS MAGAZINE

Vol. 29, September, 1951

Analyze employee turnover to improve hiring and training.—p. 1.

Use time, motion study; watch job performance spurt.—p. 1.

* Apply scientific management as operation must. J. W. Stokes.—p. 1.
* More mass feeding institutions reap rewards of dietitians' skill. M. A. Ohlson.—p. 147.
*What to consider in choosing chairs.—p. 154.

Scientific Management. In considering how to conserve an institution's resources, thinking must not be only in terms of saving food, supplies, electricity, fuel, and other material items, but also of conserving footsteps and eliminating waste motions. A dietary department is used as an example of one important place in the hospital where the application of scientific management principles is necessary. Dietary procedures which should be observed before an evaluation can be made are listed. An example of comparative testing to obtain statistical data is given. Ham was baked by the method customarily used in the hospital kitchen and by the accepted method. It was pointed out how vast savings could be made by changing cooking techniques. This testing method can be applied in many directions.

The Dietitian. This article, written by the President of A.D.A., concerns the training and the skill of the dietitian of today. The contributions dietitians are making to the mass feeding field through their knowledge of scientific nutritional data are reviewed.

Choosing Chairs. Different types of chairs for institutional use are pictured and described. Features to look for in purchasing chairs are stressed.

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THE MODERN HOSPITAL

Vol. 77, September, 1951

* Small hospitals can serve good food. C. van Tijn. —p. 112.

Small Hospitals Can Serve Good Food. The aims of the dietary department are pointed out and the manner in which these aims can be achieved are reviewed. The importance of employing a dietitian or dietitian-housekeeper for the small hospital is stressed. Where it is not possible to obtain the services of a full-time dietitian, the value of the consultant is emphasized. Regional institutes are also suggested as a way of giving additional training to food service personnel.

PERSONNEL JOURNAL

Vol. 30, July-August, 1951

* Communicating with our employees. H. S. Hall. —p. 85.
* The golden rule in employee relations. W. G. Torpey.—p. 102.

Communicating with Employees. Communication is defined as the art of developing understanding. The importance of communicating effectively with employees is pointed out by the author. We communicate by our silence, by our actions, by our inaction, by our lack of decision, and through our personality. Three elements require skillful use if communications are to be effective: (a) a realization of the importance of timing; (b) sensitivity or insight; and (c) the creation of a sympathetic attitude. These elements and other factors comprise the article.

Employee Relations. A case history is presented of one company which practices the golden rule: "Do unto others as you would have them do unto you." Management officials, from the president down, know their employees as individuals; social activities for all employees are held periodically; safety of the individual employee is carefully and continuously stressed; a pre-supervisory training program is carried on; recognition is promptly afforded outstanding achievements of individual employees; and an effective two-way communications system is maintained. These and other facets of the company's program are explained.

RESTAURANT MANAGEMENT

Vol. 69, September, 1951

* Modern miracles with beef. P. P. Logan.—p. 38.
* New breads in old baskets. A. Easton.—p. 42.

So you're going to buy your building. C. V. Gallaher.—p. 49.

Modern Miracles with Beef. Up-to-date information on beef products is presented. The location and names of wholesale cuts of beef and veal are charted, the retail uses of the various beef cuts are given, and the major breeds of beef cattle are listed. Marketing steps are described, grading of carcass meat is discussed, and the edible by-products are mentioned.

Bread Products. Recipes are given for some interesting breads. Those included are oatmeal bread, cream scones with raisins, and "Cornell formula bread" (a triple-rich bread designed to get the maximum supplementation from the protein of soy and milk).

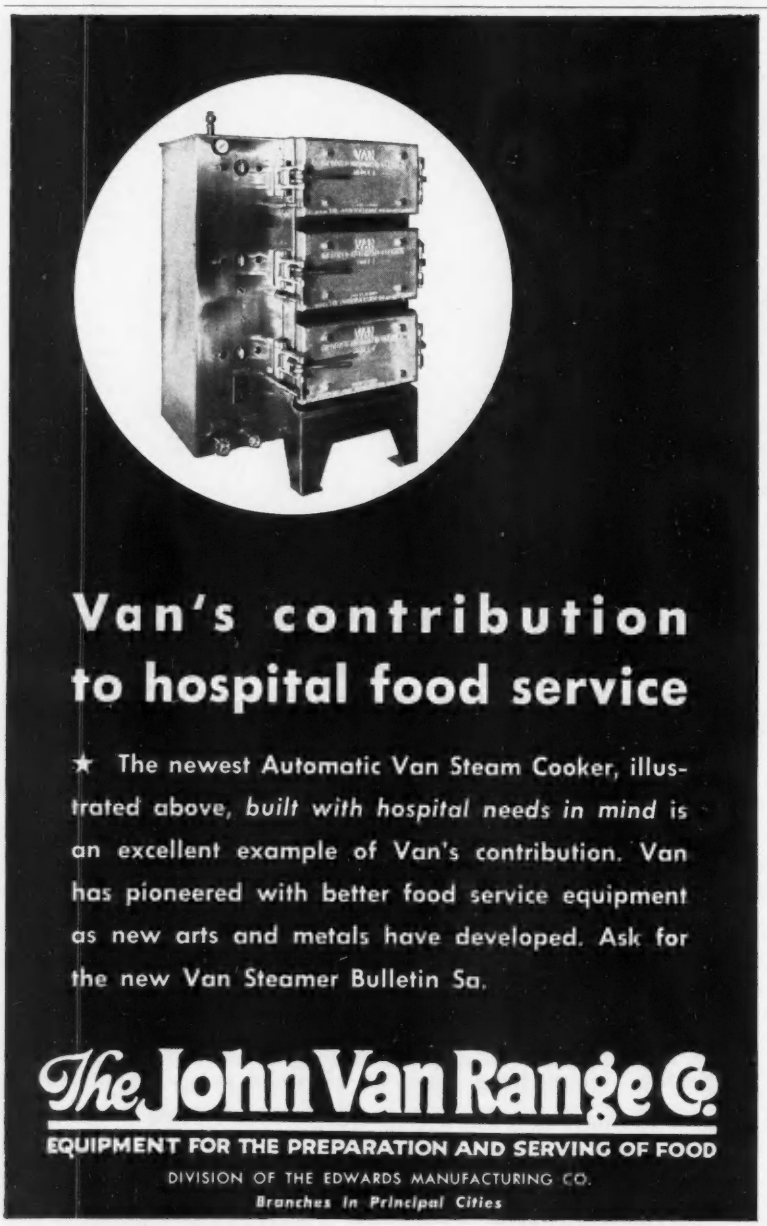
WHAT'S NEW IN HOME ECONOMICS

Vol. 16, September, 1951

* What eating means to a baby. D. V. Whipple.—p. 52.

Rolls—designed for compliments.—p. 80.

Eating Through a Baby's Eyes. "It's not just the food; it's the things that go with the eating that give it its real joy," according to the author of this article. However, the "extras" are different for the newborn infant, the growing baby, and the pre-school youngster—and entirely different in each case from those of an adult. The author describes the comforting feeling of the first meal to a bewildered newborn child; the transition from dependency, with its desire for warmth and cuddling, to the participating stage; and thence to serious interest in self-feeding. However, the young child passing out of the toddler stage has lost interest in the mere accomplishment of eating without help, and the author emphasizes that the child is as eager for conversation with meals as the adult. If the conversation is "over his head," feeding problems may be created. Satisfying the extra needs of a child, this article concludes, is highly important in developing a "good eater" in later life.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News Notes

Diabetic Camp in Kansas. Two dietitians of the Greater Kansas City Dietetic Association were responsible last summer for the food service at the camp for diabetic children sponsored by the Diabetic Society of Greater Kansas City. The twenty campers enjoyed activities appropriate for all children's summer camps, such as camping out all night, "cook-outs," and so on. They ate "pigs in blankets" and enjoyed "frontier chowder" and "pioneer drumsticks" at their picnics. The chowder was made from vegetables classified as "2A" according to the new method of calculating diabetic diets sponsored by the A.D.A., American Diabetes Association, and the Diabetes Section, U. S. Public Health Service. "Pigs in blankets" were frankfurters wrapped in specified amounts of biscuit dough and covered with aluminum foil, while the "pioneer drumsticks" were made of weighed amounts of ground beef and corn flakes, wrapped with bacon.

The dietitians were Mary Breed, now enrolled at the Harvard School of Public Health, and Marilyn Phelps, dietetic intern at the University of Kansas Medical Center.

All the children ate as nearly the same diet as possible, the differences being mainly in amounts of bread and butter. Foods served family style included milk, fruit, 2A vegetables, zero salad dressing, dill pickles, lemon wedges, and vinegar. Buffet service was used for meat, potatoes or an exchange, 2B vegetables, bread, and butter. Recipes used from the "Meal Planning" booklet published by Health Publications, Inc., included: zero salad dressing, potato salad A, Italian spaghetti, macaroni and cheese, and mixed vegetable salad. All possible bread exchanges were used: Graham crackers, saltines, cereals, spaghetti, popcorn, macaroni, biscuits, ice cream, corn on the cob, and even sponge cake.

The camp counselors cooperated with the food service program by eating the same diet served to the campers and foregoing "seconds."

For future camps, the dietitians compiled their menus, recipes, market orders, supply inventory, equipment, cook's worksheets, method of quick service, and a master meal plan chart including each child's diet for each meal.

Mrs. Bowes Honored. Anna de Planter Bowes, Chief, Nutrition Division, Pennsylvania Department of Health, was honored as one of the ten women selected to receive the 1951 Pennsylvania Week Distinguished Daughter Award. The presentation was made on October 11 at the Carnegie Museum in Pittsburgh.

This form of recognition has been given annually since 1949 to Pennsylvania women representing various fields of service. Dr. Pauline Beery Mack, Director of the Ellen H. Richards Institute, The Pennsylvania State College, was the first Distinguished Daughter, having been selected for her work on the Pennsylvania Mass Human Nutrition Studies. Mrs. Bowes is the second recipient of this award in the field of nutrition.

Interns Graduate. Six dietetic interns at *Charlotte Memorial Hospital*, Charlotte, North Carolina, received certificates at a graduation dinner in their honor on August 29. They are: Annie Wood, Nancy White, Ann Wray, Mary Mowiser, and June Combahee.

Five dietetic interns graduated at the *Stanford University Hospitals* on August 31. Diplomas were presented to the graduates at a dinner in their honor by Dr. Anthony J. J. Rourke, Superintendent of the hospitals, while Helen Hawver Anderson, Director of Dietetics, presented their pins. The graduates are: Mary Feng-ling Huang, Shanghai, China, who took her college work at Winthrop College and the University of Washington; Helen Porter, Tucson, Arizona; Muriel Harmon, Los Angeles; Carolyn Jensen, Sacramento; and Marilyn Orr, Denver.

Ten dietetic interns of the *Veterans Administration Hospital*, Bronx, New York, completed their work on September 14. The graduates are: Joan Brickman Berger, Jean Casey, Bonnie Fisher, Joan Gershun, Geraldine Gocke, F. Jacqueline Keyser, Josephine Mingrone, Martha Reddout, Martha Simington, and Cleo Veras.

Annual commencement exercises were held at *Freedmen's Hospital*, Washington, D. C., for the class of 1951 on September 20. Anna Arnold Hedgeman, Assistant to the Administrator, Federal Security Agency, delivered the address; certificates were presented by Dr. Charles E. Burbridge, Superintendent of the hospital. Mildred S. Bunton, Director of Dietetics, presented A.D.A. pins. Graduates of the class are: Barbara T. Bedford, Lorraine Brandon, Muriel S. Garnes, Evelyn Harris, Eleanor Payton, Mary K. Sollers, Mary Taylor, and Lucy Whatley.

The Food Service Division of *Brooke Army Hospital*, Fort Sam Houston, Texas, has announced the graduation of fourteen dietetic interns on September 28. The graduation program was highlighted by an address given by Maj. Gen. Edward A. Noyes, Commanding General of Brooke Army Medical Center. Maj. Gen. Arthur G. Gaines, Commanding General of the hospital, made the formal presentation of certificates. The graduates, all second lieutenants, are: Willa J. Alie; Mary L. Blundell; Dorothy L. Boland; Louise G. Drozdiak; Doris M. Fredricksen; Helen M. Gallagher; Ruth E. Kabeiseman; Josephine C. King; Julia J. Kula; Eleanor A. Love; Ermenia L. Nesci; Patricia A. Parker; and Ruth S. Salera.

Plentiful Foods. The Production and Marketing Administration has listed the following foods expected to be plentiful in November:

Protein foods

Beans, dry	Perch, ocean—frozen fillets
Cottage cheese	Tuna, canned
Milk—nonfat dry solids	Turkey
	Whiting, frozen

Fruits and vegetables

Apples	Citrus products, processed
Cabbage	Cranberries
Cauliflower	

Miscellaneous foods

Almonds	Prunes, dried
Filberts	Raisins
Honey	Walnuts

Women in Defense. On September 27 and 28, a conference on "Women in the Defense Decade" was held in New York City. Discussions centered around the question of "what women's attitudes, philosophy, and activities should be in the next ten years." Representatives of some 600 women's and coeducational organizations, as well as governmental and service agencies were present. Among the prominent speakers were Anna M. Rosenberg, Assistant Secretary of Defense; Representative Frances P. Bolton of Ohio; Margaret Culkin Banning, author; Mildred McAfee Horton, Director of the WAVES during World War II; and Agnes Rogers, Associate Editor of *The Reader's Digest*.

A.D.A.was represented at this conference by Dorothea Nicoll, Nutrition Section, Massachusetts Department of Public Health, Boston.

Meetings. San Francisco was the scene of the *American Public Health Association's* 79th annual meeting, held from October 29 to November 2. The 18th annual meeting of the Western Branch of the Association was held at the same time.

The fifth annual convention of the *American School Food Service Association* takes place November 12 through 14 in New York City. The program will include a panel discussion by junior and senior high school students from New York and four neighboring states, talks by leading nutritionists, and field trips to school cafeterias in the New York area.

Diabetes Week. November 11 through 17 are the dates set for the annual Diabetes Detection Drive sponsored by the American Diabetes Association, Inc. This year of obesity in diabetes will be emphasized, thereby

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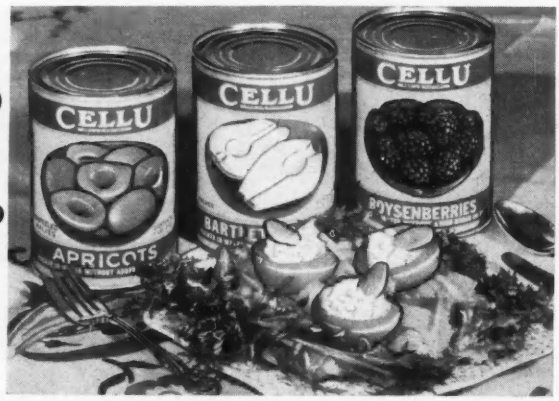

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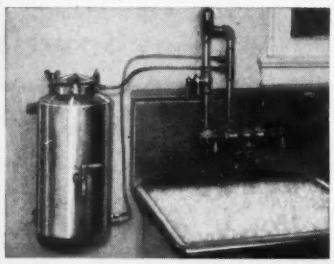

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tying the program in with the overweight campaigns of the American Medical Association, American Heart Association, the U. S. Public Health Service, and the Metropolitan Life Insurance Company. It is the aim of the campaign to have every person in a community tested for diabetes, either by his personal physician, at a Testing Center, or at a Teaching Center for Self-Testing.

In 1950, the third year the Diabetes Detection Drive was conducted, materials for more than 1½ million urine tests were distributed by the American Diabetes Association. It was found that the proportion of newly discovered cases of diabetes to the total number of people tested ran from ½ to 1 per cent.

Epidemic Intelligence Service. The U. S. Public Health Service has established an Epidemic Intelligence Service, it was announced recently, to render assistance in investigating disease outbreaks, the control of which is beyond the resources of state and local health departments. Federal Security Administrator Oscar R. Ewing stressed that the new organization also can be highly important as an adjunct to national defense.

Government Publications. *Read the Label on Foods, Drugs, Devices, Cosmetics*, a new consumer information booklet, has been issued recently by the Food and Drug Administration. Laws governing labels and reasons therefore are discussed simply and illustrated with cartoons. The booklet may be obtained from the Superintendent of Documents, Washington 25, D. C., for 15 cents.

Canning in Glass Jars in School and Institutional Kitchens—Fruits and Other Acid Foods is Agriculture Handbook No. 11 published by the Production and Marketing Administration, U.S.D.A. It covers the canning of most fruits and acid vegetables, except those such as corn, beans, and spinach which are low-acid and cannot be safely processed by the boiling-water-bath method. Equipment and methods are comprehensively described. Copies are available from the Superintendent of Documents, Washington 25, D. C. The price is 20 cents.

"U. S. Grades for Beef," U.S.D.A. Leaflet No. 310, has been released to supersede Leaflet No. 122, "U. S. Graded and Stamped Meat." It explains briefly U. S. grades for carcass beef and shows how they can be used as an aid in more efficient purchasing and selection. Federal meat stamps are illustrated and explained, a cooking guide is given, and a chart is presented showing the location of beef cuts.

National Research Council Publication. *Maternal Nutrition and Child Health* by Kirsten Utheim Toverud, Genevieve Stearns, and Icie G. Macy, is Bulletin No. 123 of the National Research Council. It was written in answer to a need for a comprehensive, world-wide survey of present knowledge of maternal nutrition in relation to the health and vigor of the infant—a need felt by the Committee on Maternal and

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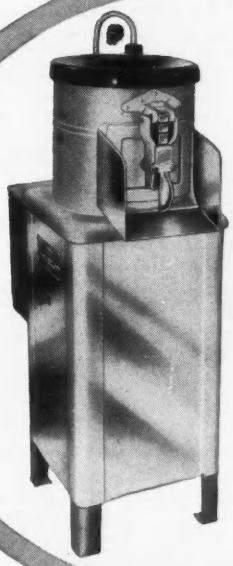

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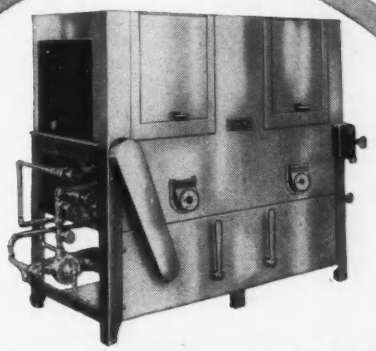

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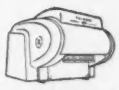

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New Consumer Publications. *Money Management—Your Food Dollar* is the title of a new booklet by the Household Finance Corporation's Consumer Education Department. It contains facts to help homemakers with every phase of spending money for food. Menu planning, actual buying, preparation, and storage are discussed. A section on nutrition is also included.

Another new Household Finance pamphlet is *Money Management—Your Health Dollar*. Topics discussed include costs of maintaining good health, ways to build and protect good health, and accident prevention. Functions of public health departments are described, as are various types of medical, dental, and nursing help and the different health agencies. The booklet closes with a discussion of health insurance. Copies of these booklets may be obtained for 5 cents each from the Consumer Education Department, Household Finance Corporation, 919 North Michigan Avenue, Chicago 11.

National Vitamin Foundation Publication. The National Vitamin Foundation has recently published *Nutrition Fronts in Public Health*, the Proceedings of the Nutrition Symposium held at Yale University, November 10, 1950. The book, Number 3 in the Nutrition Symposium Series, contains talks by Icie G. Macy, Benjamin H. Ershoff, Clive M. McCay, Ernst Simonson, Howard A. Schneider, and Leo T. Samuels. A few of the titles are "Nutrition and Maternal Health," "Nutrition as a Factor in Aging," and "Influence of Nutrition on Work Performance." The book can be obtained from the National Vitamin Foundation, 150 Broadway, New York 7, for $1.50.

New Zealand Dietetic Journal. *Journal of the New Zealand Dietetic Association (Inc.)* is the new title of the Association's former *Bulletin*. It will be issued twice yearly as the Association's official publication. Officers of this Association are: President, Miss W. M. Stenhouse; Vice-President, Miss D. Campbell; Secretary, Miss F. Davidson; and Treasurer, Miss C. D. Shearer.

Errata. On page 565, July 1951 issue of the *Journal*, column 1, lines 6 and 13, the words "riboflavin" should be changed to "folic acid."

Hotel Tour Postponed. Word has been received from Cornell University that the tour of Europe, planned for this fall by the University's School of Hotel Administration (see page 800, September issue), will be postponed until next fall.

Teaching Aids for Schools. Westinghouse Electric Corporation has recently published a newly revised twenty-four page Teaching Aids Catalogue. This catalogue describes more than eight-five booklets, charts, posters, and other aids currently available to junior and senior high school teachers. Teachers may obtain copies by writing the School Service Department, Westinghouse Electric Corporation, 306 Fourth Avenue, Box 1017, Pittsburgh 30.

Frozen Fruit Purées. Frozen lemon and orange purées have been developed at the U.S.D.A.'s Fruit and Vegetable Chemistry Laboratory in California as part of the research for new and wider uses for citrus fruits. These frozen purées may be used in pie fillings and sherbets, and are available to institutions, ice cream companies, and soda fountains.

Vitamin Variation in Lima Beans. Lima beans may have a wide variation in vitamin content. Tests made over a four-year period by the Georgia, Mississippi, and Virginia Agricultural Experiment Stations, as well as by the U.S.D.A. Regional Vegetable Breeding Laboratory at Charleston, South Carolina, show that later plantings in Georgia and Mississippi produced beans higher in ascorbic acid. However, this factor did not affect thiamine or riboflavin. Content of all three vitamins decreased with advancing maturity, ascorbic acid more than the rest.

Salt Tablets for Tomatoes. New York State housewives report favorable results after trying combination salt tablets in home-canned tomatoes at the request of the New York State Agricultural Experiment Station. Table salt is combined with a small amount of calcium chloride or other calcium salt for the purpose of keeping tomatoes whole and firm during heat processing. The tablets have been in use by commercial canners for about ten years, but only recently have they been available for home use.

News of State Associations

California Dietetic Association. At its June meeting, the California Dietetic Association voted to make available a loan fund of $200 for a student entering a dietetic internship. It was also decided that the association should contribute $250 annually to the state diabetic camp.

The *Bay Section* met on September 25 for its first meeting of the year, which took the form of a fashion show and social gathering. New officers of this local group are: Chairman, Clara-Beth Bond, Cowell Memorial Hospital, University of California, Berkeley; Vice-Chairman, Mary Rourke, St. Mary's

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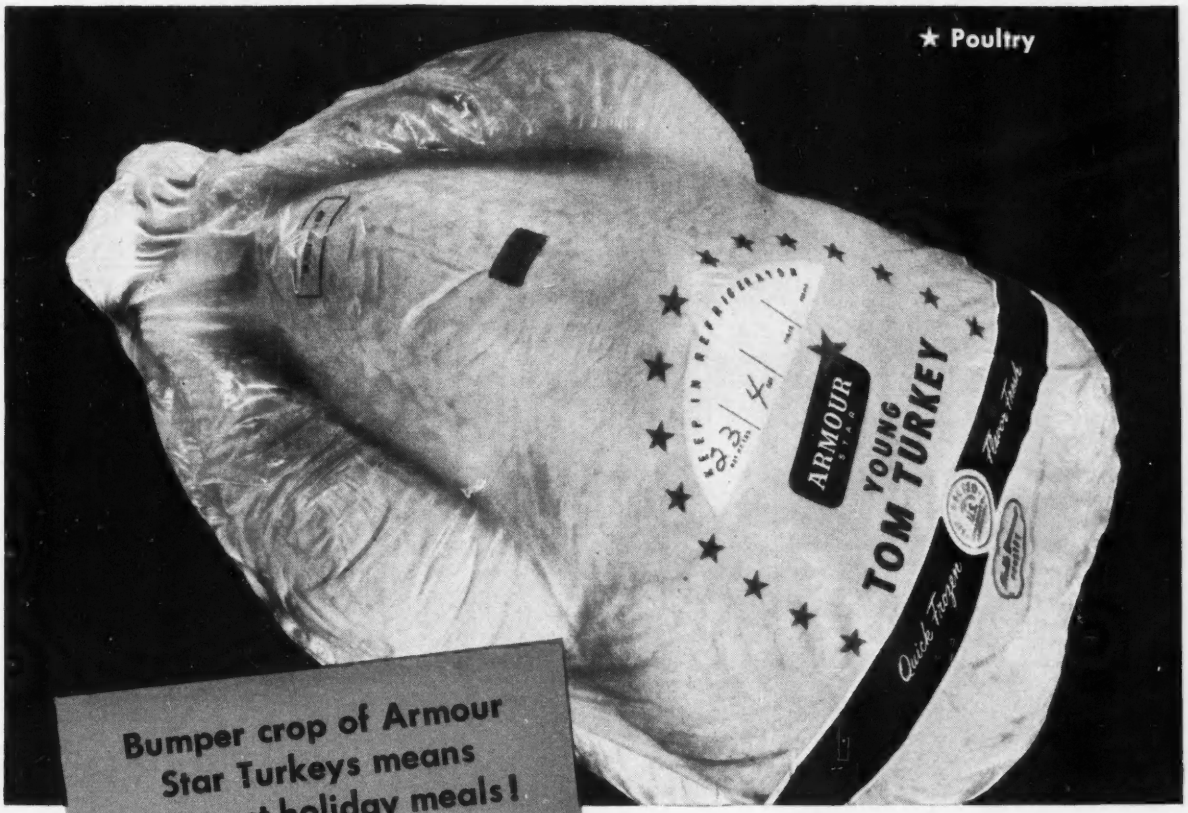

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Hospital, San Francisco; and Secretary-Treasurer, Helen Gillette, Oakland.

The *San Jose Section* of the California Dietetic Association was formed following the June meeting of the state association. It will include Santa Clara, Monterey, San Benito, and Santa Cruz. San Mateo dietitians will vote as to their preference in belonging to the Bay Section or the new group. Officers are: Chairman, Virginia P. Jansse, San Jose Hospital; Vice-Chairman, Fern G. Wendt, San Jose State College; and Secretary-Treasurer, Mildred Mancini, VA Hospital, Palo Alto.

The *Santa Barbara Section* has elected the following officers this year: Chairman, Audrey Gunterman; Vice-Chairman, Patricia W. Zassenhaus, Santa Barbara General Hospital; and Secretary-Treasurer, Elizabeth Reidy, Santa Barbara Cottage Hospital.

Hawaii Dietetic Association. The first meeting of the Hawaii Dietetic Association for the year 1951–52 was held in Honolulu on September 18, the program being under the direction of the Food Administration Committee. Shirley Fegert, Honolulu Gas Company, gave a food demonstration.

The new constitution has been adopted, printed, and distributed. It was a project undertaken by the dietitians at Leahi Hospital, Honolulu.

New officers of the Hawaii Dietetic Association are: President, Elsie Maxon Boatman, University of Hawaii, Honolulu; President-Elect, Ruth Toreson, Queen's Hospital, Honolulu; Secretary, Elaine Ching Lau, Honolulu; and Treasurer, Virginia Turner Cooksey, Wahiawa.

Montana Dietetic Association. Dietitians of St. Vincent Hospital, Billings, constructed an exhibit titled "Dietetics—A Career for Better Living" which was shown at the Midland Fair in August.

New officers of the Montana Dietetic Association, who took office on November 1, are: President, Virginia Taplin Hendrickson, Bozeman; President-Elect, Edith Ames Swearingen, Montana State University, Missoula; Vice-President, Sister Ann Perpetua, St. Vincent Hospital, Billings; and Secretary-Treasurer, Gertrude M. Holt, Montana State College, Bozeman.

North Carolina Dietetic Association. The following officers will serve the North Carolina Dietetic Association in 1951–52: President, Evelyn M. Cox, Woman's College of the University of North Carolina, Greensboro; President-Elect, Mary A. Anderson, Charlotte Memorial Hospital, Charlotte; Secretary, Beryl May Jaynes, Chapel Hill; and Treasurer, Elisabeth Yearick, Duke University Hospital, Durham.

Ohio Dietetic Association. The Ohio Dietetic Association, under the direction of Mary N. Letherman, Mount Carmel Hospital, Columbus, and members of the Columbus Dietetic Association, operated a booth at the Ohio State Fair in August. White rats and guinea pigs were displayed to show the effects of milk and ascorbic acid deficiencies. Demonstrations were given by Jane Pohlman, Columbus Milk Council, and Dorothy Kratowich, a dietetic intern at Ohio State University Hospital.

Washington State Dietetic Association. The officers of the *Seattle Dietetic Association* for 1951–52 are: President, Mary German, Consolidated Dairy Products Company; Vice-President, Virginia Priem; Secretary, Marion Syltebo; and Treasurer, Gladys Blackwood.

Association Activities

Representatives to State Meetings. Representative to fall meetings of state dietetic associations are as follows:

October 23—Ruth M. Yakel, New Jersey Dietetic Association, New Brunswick

October 26–27—Lucille Refshauge, Florida State Dietetic Association, Jacksonville

October 27—Helen Gillum, Arizona Dietetic Association, Tucson

November 6—Marguerite L. Pettee, Nebraska Dietetic Association, Omaha

November 8—Margaret A. Ohlson, Tennessee Dietetic Association, Memphis

November 16–17—Lillian S. Coover, Mississippi Dietetic Association, Jackson

Publicity for A.D.A. A feature of the October 9 issue of *Look* Magazine was an article entitled "18 Rules for Your Family's Health." Our Association cooperated in developing these eighteen rules for health and is given recognition for this on page 72 along with the American Medical Association, American Academy of Pediatrics, National Association for Mental Health, American Home Economics Association, National Safety Council, and National Warm Air and Air Conditioning Association.

New York *Herald Tribune* Forum. The Association was invited to send three representatives to the New York *Herald Tribune* Forum which was held at the Waldorf-Astoria Hotel in New York, October 22 to 24. Discussion at the Forum concerned bridging the gap between today's scientific development and the application of ethical standards. A.D.A. members attending included Meredith Jones, Alta Atkinson, and Helen C. Hamilton.

National Urban League Career Conferences. A.D.A has furnished vocational literature and has loaned a set of the Kodachrome slides for use at three career conferences being sponsored by the National Urban League. These conferences, using the theme, "Developing Skills for Careers," are being held in cooperation with: Bethune-Cookman College and the Florida State Department of Public Instruction, October 17 to 19; with Tuskegee Institute, November 14 to 16; and with Virginia State College, December 11 to 13.